Medical Officer's annual report [to] Durban Corporation.

CITY OF DURBAN

Annual Report

OF THE

CITY MEDICAL OFFICER OF HEALTH

YEAR ENDED 31st DECEMBER 1966

ANNUAL REPORT : 1966

REPORT 'A'

REPORT 'B'

City Health Department,
9, Old Fort Place,
DURBAN.

30th October, 1967.

Her Worship the Mayor and Councillors
of the City of Durban.

Madam Mayor, Ladies and Gentlemen,

I have the honour to present, in terms of Section 13 of the Public Health Act, as amended, the 64th Annual Report on the Public Health of Durban with which is incorporated an account of the activities of the City Health Department for the year 1966.

Durban continues to expand commercially, industrially and as a holiday resort. The estimated population as at the year end was 669,566, an increase of over 13,000 persons compared with 1965.

In the European, Coloured and Asiatic communities, diseases of the heart and circulatory system remained the major cause of death, enteritis and diarrhoea holding this place amongst the Bantu. Deaths from motor accidents and suicide were 174 and 70 respectively, a tragic record indeed. The infant mortality rates in all racial groups showed a welcome decrease although the rate for the Bantu leaves no room for complacency despite the rate having been more than halved since 1960. Deaths from malnutrition and kwashiorkor amongst this race group were less than half of the number recorded last year.

Attendances at the child health clinics remained at a very satisfactory level and the State subsidised skimmed milk powder scheme continued to function well. It is noteworthy that the amount of this powdered milk issued during the year was the equivalent of 1,218,984 pints of reconstituted skimmed milk.

No local cases of formidable epidemic diseases were reported during the year, although a close watch was maintained on the position elsewhere, as the City, with its huge port and international traffic is particularly vulnerable. The number of notifications for poliomyelitis, typhoid fever and diphtheria all showed an increase over the previous year, the figures being 19, 52 and 40 respectively, compared with the corresponding figures for 1965 of 9, 39 and 19. Three localised outbreaks of Salmonella infections accounted for a further 30 cases in all of paratyphoid A, B and Salmonella typhi murium infections. Four outbreaks of food poisoning occurred, one of which was no doubt due to paratyphoid A infection and the food consumed was probably contaminated by a member of the kitchen staff who was actually proved to be excreting the bacteria. Although the notifications of trachoma showed an increase, the majority of cases were very mild and bore no relationship to classical trachoma; it is felt that because the "Tric" virus is so ubiquitous the significance of these notifications is small. The remainder of the notifiable infectious diseases remained at very much the same level as in the past report year. Virus hepatitis was made notifiable in Durban from 7th October 1966 and it is considered that this will be a well worthwhile step from an epidemiological point of view.

No human cases of rabies were reported but as the disease continues to be diagnosed in dogs and other domestic animals in adjoining magisterial districts the disease remains a definite public health hazard.

Once again it is extremely disappointing to report that pulmonary tuberculosis remained the major single public health problem confronting the Department. The number of notifications, 2,412 is 346 more than in 1965 and a study of the attack rates shows the increase to lie amongst the Bantu and Indian communities; to some extent the additional notifications follow tuberculin testing of Bantu school children in the 5 - 14 year old age group. It is indeed difficult to reconcile the fact that although early diagnosis and treatment are amongst the best means of attack on the problem of this disease, "case finding" by mass X-Ray is not regarded as a service warranting a State part-refund to local authorities. There are six clinics in the City providing diagnostic and treatment facilities, one of which, the Durban Chest Clinic, is maintained by the State Health Department. Following an approach by that Department, the City Council agreed in principle that all tuberculosis outpatient services should be operated by one authority and the financial and staff implications of a take-over of the Durban Chest Clinic by the City Council was under consideration at the year's end. The problem of recruiting medical staff if and when the "take-over" materialises gives cause for much concern.

The free immunisation services continued to be well patronised and the provision of two purpose-designed mobile immunisation vehicles had a considerable impact on the immunisation state of the Asiatic and Bantu communities in regard to poliomyelitis and smallpox. Tetanus immunisation showed a marked increase when the vaccine was made freely available to local authorities and the need for this immunisation is well supported. In fact of the 31 notified cases, 17 were in respect of the disease following injury, and the overall mortality rate for this disease was over 50%.

Further steps were taken in the implementation of the City Council's 15 year programme of providing water-borne sewerage in unsewered areas, and for increasing and developing the facilities in sewered areas. Unforeseen delays in the construction of the two sea outfall disposal works added to the problem. There is no doubt that the provision of a full water-borne reticulated sewerage system, for all areas, coupled with adequate disposal measures remains, and will continue to be, the most vital task facing the City Council in regard to environmental health. That the need for the highest priority to be accorded to this immense problem is undoubted.

Over the years the Indian Market in Durban has posed a problem in public health and although the City Council in 1944 recorded its agreement in principle to the creation of a new market, little further was done. The progressive deterioration in standards led to positive action in the form of certain palliative measures being put in hand and the City Council giving notice to the occupiers of the termination of their tenancies on the 31st December 1967.

Biological control of mosquitoes continued to be most effective and the use of Tilapia species of fish in natural and man-made ponds played a large part in preventing mosquito outbreaks in many parts of the City, not in the least being the various temporary stabilisation ponds for the treatment of raw sewage.

A repetition of the milk shortage in 1965 occurred and some 50,000 gallons of "industrial" milk from unregistered sources were allowed into the City for the sole purpose of manufacturing sterilised milk. A further 6,000 gallons of fresh milk were permitted into Durban from the Rand to alleviate the shortfall. However, the amount was very small and covered a period of two months. It is, in this connection, of interest to note that the average intake of milk into the City is almost 65,000 gallons daily.

Steady progress was made in the field of housing but the demand continued to grow during the year. The housing requirements of the Coloured community remained a serious problem, and despite the major role the City Council played in providing housing for Indians, the need for further accommodation remained high. Amongst the European community the requirements of the lower income groups outstrip the supply. It is pleasing to record that the 2,500 temporary timber huts erected as an emergency measure in the Bantu township of kwaMashu were progressively demolished during the year as permanent brick houses became available; building development at kwaMashu progressed at the rate of 5 houses per day throughout the year. The Umlazi Bantu Township, outside the City but being developed by the City Council on behalf of the South African Bantu Trust, forged ahead.

Slum clearance work, which only commenced late in 1965, increased in tempo but a careful balance was maintained in view of the problems of alternative accommodation. Here the major problem to be faced is the rehousing of the lower sub-economic group, which is fully dealt with in Part B of this report.

In October of the report year the Public Health Committee of the Council resolved that provision be made on the 1967/68 draft estimates for the engagement of one or two Health Visitors to undertake preventive mental health work. This farsighted approach is most encouraging and one looks to its fulfilment in due course with eager anticipation.

The problem of filling staff vacancies, particularly for professional and technical posts has not eased. Due to a lack of suitable applicants it was not possible to fill two vacancies for clinical medical officers. With a small professional staff such vacancies hamper the efficient working and normal expansion of activities of the Department. Whilst it was just possible to maintain the authorised complement of European Health Inspectors and Health Visitors attempts to fill vacancies for two Bantu and one Indian Health Inspector were fruitless. It is not anticipated that the future will bring relief.

It is with deep regret that the early death, after a short illness, of Miss E.J. Eckhoff is recorded. Miss Eckhoff, who was the first Chief Health Visitor in this Department, occupied that post for many years, and her passing came as a great shock to all those members of the staff and no doubt many of the City's mothers who had experienced her unfailingly cheerful personality and quiet, unobtrusive efficiency. Miss Eckhoff, who devoted much time and work to the Department's social activities, was also active in the charitable field in an unheralded way. She will be sadly missed by all who had the privilege of knowing her.

The sudden death of Dr. L. Raftery, F.R.C.O.G., on the 9th June 1967 whilst overseas was also distressing

to the Department. Dr. Raftery held the post of part-time Specialist attending the ante-natal clinics from May 1952; her devotion to her work and sympathetic approach will be sadly missed by both patients and staff alike.

To Her Worship the Mayor and City Councillors I wish to express my warm thanks for their interest in public health matters and in particular the Chairman and Members of the Public Health Committee for their continued encouragement and support at all times. The ready assistance and consideration afforded this Department by other Heads of Departments and their staffs is gratefully acknowledged and the unfailing courtesy and assistance extended to this Department by the Municipal Service Commission is indeed appreciated.

To members of the Press, the South African Broadcasting Corporation and Radio Bantu I must again reiterate my keen appreciation of their interest in Public Health matters and unfailing co-operation in bringing to the attention of the citizens of Durban the many aspects of public health interest and importance in the City and for acting as a most valued link between my Department and the public.

The progress made by the Department during the year is in itself a tribute to each and every member of the staff and to them I extend my sincere appreciation for their loyal support, team spirit and consistently high standard of work.

I have the honour to be,
Ladies and Gentlemen,
Your obedient Servant,

C. R. MACKENZIE

M.B.; B.Ch.; D.P.H.; D.T.M.& H.(Rand);
F.R.S.H.
Honorary Senior Lecturer in Public
Health Administration, University of
Natal.

CITY MEDICAL OFFICER OF HEALTH.

REPORT "A"

I. HISTORICAL AND GEOGRAPHICAL

(a) Although Durban gained borough status in 1854 it was not until some 20 years later that the Health Department came into being to deal with problems relating to drainage, animal slaughter, sanitation and diseases. Durban has profited greatly from its energetic approach to promotive and preventive medicine and today possesses a well balanced environmental and personal health service. The residents and visitors, the latter now exceeding a quarter million annually, can enjoy life in this City with confidence in the standards of public health. This is in direct contrast to the sufferings experienced in the earlier part of the century from malaria, typhoid, dysentery, enteritis and even plague, the latter being introduced during the Anglo-Boer war from the East and South America.

(b) Throughout its history the Department's organisation has been continually reorientated to ensure the most remunerative health investment. Specialised sections of the Department have been created for this purpose and their activities are set out in the subsequent chapters. The present day structure is founded on a harmonious relationship with all races. The racial composition of Durban's populace makes it necessary, particularly in the promotive field, to take into account the cultural and traditional aspects of all races in planning health programmes.

(c) Commerce continues its rapid expansion and more than 22,000 trading licences cater for the needs of the population and the unending stream of tourists. The premises wherein these businesses are undertaken are subject to health control both from the employee and customer aspects. Special attention is paid to food undertakings; also trades which are likely to be of an offensive character.

(d) Industrially, also, the City continues to expand rapidly but such expansion often brings new industries and processes with attendant health problems and so have to be closely checked to prevent any conditions prejudicial to health from arising.

Area

The Municipal area was increased in size by approximately 3 square miles (1,769 acres) as a result of the incorporation of a portion of the Farm Welbedagt on the South Western boundary of Durban. The total area of the City now exceeds 97 square miles (62,253 acres).

Valuation: (1965 figures in parenthesis)

	Land	Buildings
Old Borough and Added Areas (excluding Welbedagt and kwaMashu)	R188,632,430 (R184,207,050)	R369,342,100 (R332,088,990)

Rates (including Water Rate) (cents per Rand)	Land	Buildings
(a) Code 1 (Residential property, dwellings, maisonettes, etc.)	2.23 cents	2.23 cents
(b) Code 2 (Residential property, flats, boarding houses and private hotels)	2.17 cents	2.17 cents

Rates (including Water Rate) (cents per Rand)	Land	Buildings
(c) Code 3 (Other than residential property but excluding agricultural land)	5.88 cents	0.98 cents
(d) Code 4 (Agricultural land)	2.37 cents	0.395 cents

It is recorded that Welbedagt, the valuations of which have not yet been assessed, will be brought on charge by interim assessment, at 20% of the General Rate applicable to the City plus the water rate.

Meteorological Data

Although rain fell on only 130 days, eight less than the previous year, there was a fairly marked decrease in the volume of rain, 28.47 inches compared with 39.24 inches in 1965.

The daily average hours of sunshine increased to 6.75 from 6.70 for the preceding year.

For the first 7 months of the year radiosonde balloon flights were carried out in the afternoons but these late readings have little significance. However, balloon flights were also undertaken in the mornings for the last 5 months and the results are compared below for the corresponding months of 1965.

Month	Typical Number of Days when Ground Inversions Exist (1965 in brackets)	
August	11	(20)
September	9	(13)
October	6	(9)
November	4	(6)
December	3	(4)

METEOROLOGICAL DATA

1966	24 hours Shade Temperature (°C)			Relative Humidity		Barometer Readings (inches)			Rainfall				Sunlight
Month	Maximum	Minimum	Mean	Minimum	Average	Maximum	Minimum	Mean	m.m.	Inches	No. of days on which rain fell	Highest fall (m.m.)	Average hours of Sunshine per day
January	28.3	21.5	24.5	51	84	30.19	29.67	29.92	142.2	5.59	16	57.5	5.50
February	26.7	19.1	22.9	33	76	30.21	29.56	29.91	79.7	3.14	13	16.8	5.61
March	28.7	19.5	23.7	38	77	30.24	29.51	29.96	21.4	0.84	8	9.6	8.76
April	24.8	15.5	20.2	29	73	30.39	29.51	30.06	38.8	1.53	12	15.9	6.79
May	23.8	13.1	18.5	23	76	30.34	29.72	30.05	102.8	4.05	11	37.0	7.07
June	23.4	11.5	17.2	26	76	30.49	29.75	30.20	38.5	1.52	6	32.3	7.56
July	22.7	9.0	15.9	14	69	30.73	29.62	30.13	13.4	0.53	3	6.5	8.32
August	22.5	11.8	17.3	28	75	30.59	29.72	30.11	30.9	1.22	6	10.6	7.55
September	23.1	13.9	18.6	32	75	30.53	29.63	30.11	41.3	1.63	10	18.2	6.93
October	24.0	16.0	19.9	42	76	30.48	29.72	30.06	41.4	1.63	16	10.8	5.68
November	24.9	17.8	21.2	41	76	30.25	29.49	29.97	112.7	4.44	14	47.0	4.91
December	27.1	20.3	23.3	46	79	30.21	29.61	29.90	59.9	2.36	15	17.8	6.25
						Total for the year			723.0	28.47	130		6.75 Daily Average for year

II. VITAL STATISTICS

Population (Estimated):

Europeans	181,596	(27.12%)
Coloureds	29,840	(4.46%)
Bantu	201,023	(30.02%)
Asiatics	257,107	(38.40%)
	669,566	

The proportion of Europeans to the total population continues to decrease, being 10% less than it was 30 years ago, i.e. 27% in the current year and 37% in 1936. Conversely the Asiatic proportion has increased from 33% to 38% and the Bantu by 4%.

Births:

Race	Legitimate				Illegitimate				Totals			
	M	F	Total	1965	M	F	Total	1965	M	F	Total	1965
European	1683	1593	3276	3034	81	71	152	143	1764	1664	3428	3177
Coloured	535	561	1096	1071	157	202	359	326	692	763	1455	1397
Bantu	2609	2689	5298	5422	1651	1647	3298	3580	4260	4336	8596	9002
Asiatic	4159	4238	8397	8561	110	102	212	256	4269	4340	8609	8817
Totals	8986	9081	18067	18088	1999	2022	4021	4261	10985	11103	22088	22393

Crude Birth Rates: (Number of births per 1000 population; the 1965 figures are shown in parenthesis)

European	18.88	(17.80)
Coloured	48.76	(48.17)
Bantu	42.76	(45.42)
Asiatic	33.48	(35.19)
All Races	32.99	(34.12)

The decline of the European rate did not continue and an increase of 251 births over the preceding year is reflected which brings the rate to 18.88 compared with 17.80 for 1965.

The rate for Bantu continues at a high level as does the rate for the Coloured community.

Stillbirths: (Rates per 1000 live births, the 1965 figures being given in parenthesis)

	Number		Rates	
European	48	(22)	14.20	(6.97)
Coloured	25	(30)	17.48	(21.95)
Bantu	264	(251)	31.69	(28.68)
Asiatic	180	(162)	21.35	(18.72)
All Races	517	(465)	23.97	(21.21)

The rates reflect a noticeable increase in the European section of the population.

Illegitimate Births: (As a percentage of total births, with the 1965 figures in parenthesis)

European	4.43	(4.50)
Coloured	24.67	(23.34)
Bantu	38.37	(38.66)
Asiatic	2.46	(2.90)
All Races	18.20	(19.22)

The rates are fairly constant compared with 1965, but it is noteworthy that the Bantu rate has fallen by 40% over the last seven years. It is possible that the improved housing and education for this group has played a major role in preventing many illegitimate and unwanted children. The rates generally are very similar to those obtaining in the other major cities in the Republic.

Deaths:

Race	Total Deaths				Crude Death Rate per 1000 population	
	Male	Female	Total	(1965)	1966	(1965)
European	1007	791	1798	1886	9.90	10.57
Coloured	161	139	300	282	10.05	9.72
Bantu	1459	1039	2498	2770	12.43	13.93
Asiatic	1126	826	1952	1832	7.59	7.31
All Races	3753	2795	6548	6770	9.78	10.32

The decrease in the Bantu rate over the past ten years related to the increased birth rate is noteworthy and directs attention to future problems in this group.

The three main causes of death for the various racial groups were as follows:-

Cause of Death	No.	% of Total Deaths
European		
(a) Heart and circulatory system	666	37.04
(b) Neoplasms	316	17.58
(c) Vascular lesions of C.N.S.	184	10.23
Coloured		
(a) Heart and circulatory system	41	13.67
(b) Pneumonias	37	12.33
(c) Neoplasms	30	10.00
Bantu		
(a) Enteritis and diarrhoea	229	9.17
(b) Pneumonias	225	9.00
(c) Heart and circulatory system	135	5.40
Asiatic		
(a) Heart and circulatory system	434	22.23
(b) Pneumonias	291	14.91
(c) Vascular lesions of C.N.S.	186	9.53
All Races		
(a) Heart and circulatory system	1276	19.49
(b) Pneumonias	702	10.72
(c) Neoplasms	583	8.90

The predominance of heart and circulatory deaths in the European and Asiatic races contrasts with the high mortality state in the enteritis, diarrhoea and pneumonia classifications amongst the Bantu.

Deaths from Motor Accidents

European	36
Coloured	15
Bantu	78
Asiatic	45
Total	174

Suicides

European	25
Coloured	5
Bantu	10
Asiatic	30
Total	70

It is tragic to record once again the loss of life from motor accidents and suicides, more especially as they are so unnecessary.

Infant Mortality: (Deaths under the age of 1 year and rate per 1000 live births with 1965 figures in parenthesis)

	Number of Deaths		Rate	
European	86	(82)	25.44	(25.99)
Coloured	54	(64)	37.76	(46.82)
Bantu	893	(1021)	107.18	(116.67)
Asiatic	354	(424)	42.00	(48.87)
All Races	1387	(1591)	64.30	(72.56)

The rates show a slight decrease for all races although the rate for the Bantu is strikingly indicative of the need for continued positive action.

Maternal Deaths: (Deaths from causes related to Childbirth and rate per 1000 live births with 1965 figures in parenthesis)

	Number of Deaths		Rate	
European	3	(3)	0.89	(0.95)
Coloured	1	(3)	0.70	(2.19)
Bantu	12	(18)	1.44	(2.06)
Asiatic	2	(9)	0.24	(1.04)
All Races	18	(33)	0.83	(1.50)

No abnormal trend is in evidence despite a generally lower rate compared with the preceding year.

TYPHOID : NOTIFICATIONS AND DEATHS 1940 TO 1965

(NOTIFICATION RATE PER 1,000 POPULATION : MORTALITY RATE PER CENT OF TOTAL NOTIFICATIONS)

Year	EUROPEAN				COLOURED				BANTU				ASIATIC				ALL RACES			
	Notifications		Deaths		Notifications		Deaths		Notifications		Deaths		Notifications		Deaths		Notifications		Deaths	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No	Rate	No.	Rate	No.	Rate	No.	Rate
1940	52	.56	5	9.62	4	.49	–	–	42	.60	12	28.57	23	.26	7	30.43	121	.47	24	19.83
1941	24	.26	2	8.33	1	.12	–	–	70	.98	23	32.86	15	.17	6	40.00	110	.48	31	28.18
1942	123	1.16	10	8.13	13	1.53	1	7.70	164	2.21	39	23.78	22	.23	10	45.45	322	1.15	60	18.63
1943	68	.64	6	8.82	10	1.17	2	20.00	156	2.13	34	21.79	71	.75	15	21.12	305	1.09	57	18.69
1944	37	.34	6	16.21	3	.34	–	–	108	1.36	37	34.26	46	.47	11	23.91	194	.69	54	27.83
1945	17	.15	2	11.76	5	.58	1	20.00	62	.86	19	30.65	28	.28	6	21.43	112	.39	28	25.00
1946	18	.14	–	–	7	.68	–	–	113	1.04	38	33.63	39	.34	9	23.08	177	.49	47	26.55
1947	14	.11	–	–	21	1.98	2	9.52	108	.99	29	26.85	67	.57	10	14.93	210	.57	41	19.52
1948	7	.05	1	14.29	7	.64	–	–	57	.52	9	15.79	24	.20	4	16.67	95	.26	14	14.73
1949	12	.09	–	–	5	.44	–	–	21	.19	8	38.10	10	.08	3	30.00	48	.13	11	22.92
1950	16	.12	–	–	2	.16	1	50.00	36	.28	15	41.67	40	.31	2	5.00	94	.24	18	19.15
1951	7	.05	–	–	1	.07	–	–	66	.49	24	36.36	24	.17	6	25.00	98	.23	30	30.61
1952	9	.07	–	–	1	.06	–	–	54	.38	10	18.52	37	.25	2	5.41	101	.23	12	11.88
1953	4	.03	–	–	–	–	–	–	53	.36	11	20.75	16	.10	–	–	73	.16	11	15.07
1954	5	.04	–	–	4	.22	–	–	74	.48	9	12.16	9	.06	2	22.22	92	.19	11	11.96
1955	8	.05	–	–	3	.16	–	–	73	.44	4	5.48	16	.10	–	–	100	.20	4	4.00
1956	5	.03	–	–	1	.05	–	–	52	.30	3	5.77	9	.05	–	–	67	.13	3	4.48
1957	6	.04	1	16.66	1	.04	–	–	110	.61	6	5.45	5	.03	1	20.00	122	.22	8	6.56
1958	7	.04	–	–	5	.19	–	–	246	1.32	22	8.13	20	.09	2	5.00	278	.49	24	8.63
1959	6	.04	–	–	1	.04	1	100.00	280	1.45	21	7.50	16	.07	2	12.49	303	.51	24	7.92
1960	8	.05	1	12.50	4	.16	–	–	71	.39	3	4.22	7	.03	–	–	90	.16	4	4.44
1961	2	.01	–	–	2	.08	–	–	39	.21	2	5.13	16	.07	1	6.25	59	.10	3	5.08
1962	5	.03	–	–	–	–	–	–	25	.13	–	–	11	.05	–	–	41	.07	–	–
1963	1	.01	–	–	3	.11	–	–	25	.13	1	4.00	6	.03	–	–	35	.06	1	2.86
1964	2	.01	–	–	1	.04	–	–	30	.15	3	10.00	10	.04	–	–	43	.07	3	6.98
1965	5	.03	–	–	1	.03	–	–	23	.12	–	–	10	.04	–	–	39	.06	–	–
* 1966	–	–	–	–	3	.10	–	–	37	.18	3	8.11	12	.05	–	–	52	.08	3	5.77

* For 1966 the above table only includes cases where Salmonella Typhi was the causative organism.

III. INFECTIOUS DISEASES

INTRODUCTION

There were no local cases of formidable epidemic diseases during the year, but visits were nevertheless necessary to investigate reports of suspect cases of smallpox, all of which proved to be negative.

NOTIFICATIONS

Set out below is a table showing the number and racial distribution of the confirmed local cases of notifiable infectious diseases notified to this Department during the year 1966.

Disease	E	C	B	A	Total	Attack Rate per 1000 population
Poliomyelitis	1	-	12	6	19	.0284
Typhoid Fever (S.typhi only)	-	3	37	12	52	.0777
Other Salmonellae Fevers	3	4	16	7	30	.0441
Diphtheria	2	1	16	21	40	.0597
Encephalitis	5	-	4	4	13	.0194
Scarlet Fever	42	-	-	-	42	.0627
Leprosy	-	-	9	-	9	.0134
Gonococcal Ophthalmia	-	-	3	4	7	.0105
Puerperal Sepsis	-	-	16	2	18	.0269
Meningococcal Meningitis	8	3	11	5	27	.0403
Tetanus	-	-	22	9	31	.0463
Trachoma	68	1	-	5	74	.1105
Ophthalmia Neonatorum	-	-	5	2	7	.0105
Viral Hepatitis	29	3	3	9	44	.0657
Total	158	15	154	86	413	

The number of notifications in respect of poliomyelitis, typhoid fever, trachoma, and diphtheria have shown a marked increase compared with the figures for 1965, while the other notifiable diseases have remained very much the same.

Viral hepatitis appears on the table for the first time having been declared a notifiable disease in certain major cities of the Republic, of which Durban is one, in October 1966.

Typhoid Fever

In view of the occurrence of a large number of cases of paratyphoid fever during 1966, it is convenient to separate these statistics from typhoid fever and the adjoining table which has previously recorded the notifications, deaths, and appropriate rates for the "group of enteric fevers" as a whole for Durban since 1940 now only refers to notifications in respect of Salmonella typhi.

During the year there were 52 cases of typhoid fever notified, which is only a slight increase over recent years. There were 3 deaths.

In the instance of one Coloured family, two brothers contracted the disease but the source of infection could not be established. Routine investigations which are carried out with each notification led to the discovery of

DIPHTHERIA : NOTIFICATIONS AND DEATHS : 1940 to 1965

(Notification Rate per 1,000 Population : Mortality Rate per cent. of Total Notifications)

Year	EUROPEAN				COLOURED				BANTU				ASIATIC				ALL RACES			
	Notifications		Deaths		Notifications		Deaths		Notifications		Deaths		Notifications		Deaths		Notifications		Deaths	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1940	194	2.10	3	1.55	21	2.60	–	0.00	16	1.23	2	12.50	23	0.26	1	4.35	254	0.98	6	2.36
1	228	2.44	5	2.19	18	2.18	–	0.00	42	0.59	7	16.67	8	0.09	1	12.50	296	1.13	13	4.39
2	262	2.48	2	0.76	26	3.07	1	3.85	63	0.85	4	6.35	14	0.15	–	0.00	365	1.30	7	1.92
3	295	2.76	9	3.05	24	2.80	2	8.33	44	0.60	2	4.55	15	0.16	3	20.00	378	1.34	16	4.23
4	416	3.84	7	1.68	74	8.43	–	0.00	73	1.01	16	21.92	36	0.37	2	5.56	599	2.09	25	4.17
5	255	2.33	6	2.35	36	4.01	1	2.78	116	1.61	9	7.76	37	0.37	–	0.00	444	1.53	16	3.60
6	154	1.23	7	4.55	17	1.66	1	5.88	64	0.59	7	10.94	38	0.33	10	26.32	273	0.76	25	9.15
7	156	1.23	4	2.56	24	2.26	2	8.33	110	1.01	9	8.18	46	0.39	7	15.22	336	0.92	22	6.55
8	73	0.57	1	1.37	8	0.73	–	0.00	93	0.85	12	12.90	18	0.15	5	27.78	192	0.52	18	9.37
9	95	0.73	–	0.00	21	1.85	2	9.52	66	0.60	12	18.18	39	0.32	6	15.38	221	0.59	20	9.05
1950	145	1.10	1	0.69	34	2.65	2	5.88	124	0.97	18	14.52	58	0.45	7	12.07	361	0.90	28	7.75
1	58	0.45	2	3.45	14	0.94	2	14.29	150	1.12	24	16.00	47	0.32	11	28.40	269	0.63	39	14.50
2	50	0.38	4	8.00	7	0.45	–	0.00	103	0.73	19	18.45	51	0.34	11	21.57	211	0.48	34	16.11
3	39	0.28	2	5.13	26	1.51	5	19.23	76	0.51	19	25.00	49	0.32	11	22.45	190	0.41	37	19.47
4	25	0.17	1	4.00	8	0.44	–	0.00	48	0.30	6	12.50	19	0.12	–	0.00	100	0.21	7	7.00
5	75	0.50	1	1.33	34	1.82	2	5.88	102	0.61	16	15.69	69	0.42	15	21.74	280	0.56	34	12.14
6	70	0.46	5	7.14	13	0.67	1	7.69	43	0.24	17	39.53	69	0.42	12	17.39	195	0.37	35	17.95
7	38	0.25	4	10.53	5	0.21	–	0.00	37	0.21	11	29.73	31	0.16	3	9.68	111	0.20	18	16.21
8	36	0.25	3	7.89	6	0.24	–	0.00	57	0.31	13	22.81	70	0.34	15	21.43	171	0.30	31	18.13
9	24	0.15	–	0.00	12	0.46	1	8.33	55	0.29	4	7.27	24	0.11	5	20.83	115	0.19	10	8.69
1960	9	0.06	1	11.11	7	0.28	–	–	56	0.31	6	10.71	22	0.10	4	18.17	94	0.16	11	11.70
1	8	0.05	–	0.00	4	0.16	–	0.00	63	0.34	11	17.46	28	0.12	3	10.71	103	0.17	14	13.59
2	10	0.06	1	10.00	5	0.19	–	0.00	46	0.24	7	15.22	9	0.04	2	22.22	70	0.11	10	14.29
3	3	0.02	–	–	6	0.22	1	16.67	17	0.09	1	5.88	12	0.05	3	25.00	38	0.06	5	13.16
4	5	0.03	–	–	2	0.07	–	–	15	0.08	2	13.33	11	0.05	5	45.45	33	0.05	7	21.21
65	1	0.006	–	–	2	0.07	–	–	13	0.07	2	15.38	3	0.01	–	–	19	0.03	2	10.53
1966	2	0.01	–	–	1	0.03	1	100.00	16	0.08	3	18.75	21	0.08	6	28.57	40	0.06	10	25.00

one carrier. This was a Bantu female aged 22 years who proved to be a faecal carrier and although she had to be regarded as a local case, it is significant that she had only arrived four weeks previously from a rural district and indications were that the source of her infection had been in this area.

A register is maintained of all carriers and they are regularly followed up and tested after treatment for at least two years following the last positive laboratory report. Fortunately all cases have remained negative according to stool and urine cultures following intensive treatment.

Thirteen cases of typhoid fever were notified from the kwaMashu Bantu Township, 6 cases from Lamontville and 4 from Chatsworth, but no cases occurred in the Merebank Township.

Salmonella Infections

This group has been constituted to separate cases of salmonella infections due to organisms other than Salmonella typhi, and includes all cases of paratyphoid A, B and C fevers. There were 30 notifications in this group, made up as follows:

Salmonella paratyphi A	25
" " B	2
" " (untyped)	1
" typhi murium	2
	30

One death from Salmonella paratyphi A infection occurred.

During the months of February and March of 1966 there were two outbreaks of paratyphoid fever in the nursery and children's ward of a local hospital. These outbreaks were responsible for the great majority of paratyphoid notifications. Investigations carried out at the time revealed that three of the nursing staff in the nursery were symptomless carriers of Salmonella paratyphi A organisms. They were removed from duty and successfully treated.

An outbreak in a local hotel of food poisoning due to Salmonella paratyphi A organisms, is described in Chapter IV of this report.

Diphtheria

The adjoining table sets out the notifications, deaths and appropriate rates for Durban since 1940. The number of cases notified for 1966, namely 40, shows a marked increase compared with the 19 cases notified during 1965. Of the 40 notifications only 2 were Europeans and 1 was a Coloured, but 21 were Asiatics and 16 were Bantu. Ten of these cases died and comprised 1 Coloured, 6 Asiatics and 3 Bantu. Two of these cases, a Coloured and an Asiatic, had received 2 and 1 D.W.T. inoculations respectively.

Of the 40 notifications 31 were clinical cases and 9 were carriers. The immunisation state of these cases is depicted hereunder :-

Details	31 Clinical cases	9 Carriers
3 doses of vaccine	2	4
2 doses of vaccine	2	-
1 dose of vaccine	3	-
No previous immunisation	22	5
Immunisation state not known	2	-

Twenty-one of the cases were under 5 years of age, 14 were in the age group 5 - 9 years, 3 in the age group 10 - 14 years and the remaining 2 cases were both 22 years of age. One of the 22-year old cases was a Bantu Nurse who was found to be a carrier after a child patient in the Ward had been diagnosed as suffering from the disease.

Poliomyelitis

The following table sets out notifications in racial grouping for the City since 1956 :-

Race	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
European	82	113	13	23	9	3	-	1	-	-	1
Coloured	18	7	1	-	1	3	-	-	-	-	-
Bantu	32	27	7	21	29	21	4	20	7	9	12
Asiatic	26	16	6	7	8	2	-	5	1	-	6
Totals	158	163	27	51	47	29	4	26	8	9	19

As could be anticipated the upsurge in the incidence of this disease apparent in the last three months of 1965 continued into 1966 and resulted in 19 cases of poliomyelitis being notified during the year. Eighteen of the cases varied in age from 5 months to 5 years and the remaining case was a Bantu male aged 30 years. One death was recorded, a Bantu child aged 4 years who died from bronchopneumonia. This child had not received any previous immunisation against poliomyelitis.

Of the 19 cases, 14 had not had any previous immunisation; two had received 3 doses of vaccine, one 2 doses and two 1 dose each. It is recorded that in these instances the disease was not severe.

Of virus studies that were performed the following isolations were obtained :-

Type I Polio virus	6 cases
Type I Polio virus plus Cocksackie A virus	1 case
Type II Polio virus	1 case
Echo virus (Type 7)	1 case

Trachoma

The table below depicts the incidence of this disease in Durban since 1940. During 1966 there were 74 notifications which is very much higher than any previous figure. It is also noteworthy that of the 74 cases, 68 were Europeans, almost all of whom were notified by one ophthalmologist. These cases were all confirmed by isolation of Tric virus at the South African Institute for Medical Research.

The ages of these cases varied from 13 months to 93 years and it should be noted that in the majority of instances the disease was of a very mild form and furthermore was diagnosed in persons whose living conditions were of a high standard.

The diagnosis of this disease on virus studies only appears to be fraught with complications as usually the classical clinical features are visualised with such a diagnosis and this has not been the case. In fact it is highly probable that if only a major virological survey for this disease was carried out the number of cases found would be astonishing, as the Trio virus seems to be ubiquitous.

Trachoma Notifications since 1940:

Year	European	Coloured	Bantu	Asiatic	Total
1940	-	-	2	-	2
1941	-	-	-	2	2
1942	-	-	1	-	1
1943	-	-	-	1	1
1944	-	-	-	-	-
1945	-	1	-	-	1
1946	-	-	-	-	-
1947	-	-	-	-	-
1948	-	-	-	-	-
1949	-	-	1	-	1
1950	-	-	-	-	-
1951	-	-	-	1	1
1952	-	-	-	-	-
1953	-	-	-	-	-
1954	-	-	-	-	-
1955	-	-	-	-	-
1956	-	-	1	-	1
1957	-	-	-	-	-
1958	-	-	-	-	-
1959	-	-	-	-	-
1960	-	-	-	-	-
1961	-	-	-	-	-
1962	-	-	3	2	5
1963	2	1	27	2	32
1964	-	6	1	8	15
1965	26	-	1	1	28
1966	68	1	-	5	74

Encephalitis

There were 13 notifications of this disease during 1966 compared with the 14 cases notified during 1965. The following table sets out the aetiology of these cases and also indicates the racial incidence:-

Aetiology	E	C	B	A	Total
Virus Encephalitis	5	-	2	2	9
Measles Encephalitis	-	-	2	1	3
Chickenpox Encephalitis	-	-	-	1	1
Totals	5	-	4	4	13

Four deaths were recorded, viz: an Asiatic 33 years old from virus encephalitis; 3 due to measles encephalitis comprising an Asiatic aged 13 months and 2 Bantu aged 15 months and 3 years.

Meningococcal Meningitis

There were 27 notifications of this disease during the year which is 3 less than the previous year. There were 4 deaths recorded, made up of 1 Coloured, 1 Bantu and 2 Asiatics. The following table sets out the notifications since 1955 with the deaths in parenthesis since 1961.

Year	E	C	B	A	Total
1955	7	-	4	3	14
1956	5	3	22	3	33
1957	5	1	6	6	18
1958	6	2	11	4	23
1959	4	2	-	2	8
1960	2	2	2	-	6
1961	1 (-)	- (-)	4 (-)	1 (1)	6 (1)
1962	2 (-)	- (-)	3 (-)	- (-)	5 (-)
1963	2 (-)	- (-)	1 (1)	1 (-)	4 (1)
1964	5 (-)	1 (-)	3 (1)	2 (2)	11 (3)
1965	7 (1)	2 (1)	16 (2)	5 (-)	30 (4)
1966	8 (-)	3 (1)	11 (1)	5 (2)	27 (4)

Leprosy

Nine cases, all Bantu, were notified and represent an increase of 5 cases compared with the previous year. The cases varied in age from 29 years to 64 years, one of the cases had spent a previous period in a leper institution. Although most of these cases had lived in Durban for many years, the disease was probably contracted in the country districts.

Scarlet Fever

There were 42 notifications during the year, a decrease on the 1965 figure when 53 notifications were reported.

Where home conditions were satisfactory for isolation and treatment, the patient was allowed to remain at home. Ten cases were treated in hospital.

Tetanus

The following table sets out the ages and racial incidence of the 31 tetanus notifications which occurred during 1966, 14 of which were in respect of cases of tetanus neonatorum. Eighteen deaths were recorded and these are included in parenthesis in the table. This high mortality rate of over 50% is very striking and was due in the main to secondary pulmonary infection while under I.P.P.R. treatment.

Details	E	C	B	A	Total
0 - 30 days	-	-	12 (9)	2 (1)	14 (10)
1 mth. to 5 mths.	-	-	- -	- -	- -
6 mths. to 11 mths.	-	-	- -	- -	- -
1 yr. to 4 yrs.	-	-	- -	1 (1)	1 (1)
5 yrs. to 9 yrs.	-	-	- -	- -	- -
10 yrs. to 19 yrs.	-	-	1 (1)	1 (-)	2 (1)
20 yrs. to 29 yrs.	-	-	3 (2)	2 (1)	5 (3)
30 yrs. to 39 yrs.	-	-	2 (-)	- -	2 (-)
40 yrs. and over	-	-	4 (2)	3 (1)	7 (3)
Totals	-	-	22 (14)	9 (4)	31 (18)

Viral Hepatitis

This disease was promulgated as a notifiable disease for the City of Durban and certain other major cities of the Republic on 7th October 1966. Between that date and the end of the year 44 cases were notified, made up of 29 Europeans, 3 Coloureds, 3 Bantu and 9 Asiatics. Three deaths were recorded: a European 51 years of age, a Bantu of 7 months and an Asiatic 20 years old.

IV. OTHER COMMUNICABLE DISEASES

I. PARASITOLOGY - Amoebiasis Research Unit

It is a privilege to present the following informative report from so prominent a scientist as Professor R. Elsdon-Dew, the Director of the Amoebiasis Research Unit, Institute for Parasitology, Durban, who has kindly made it available for inclusion in this Report.

"Amoebiasis

Durban was at one time notorious for this disease, but the activities of the Unit have placed the disease in proper perspective. Once it was appreciated that Entamoeba histolytica is normally non-pathogenic and that, in the majority of people it causes no disease, the common tendency to attribute a variety of vague minor clinical presentations to this parasite is disappearing. Now one seldom hears of patients with "Natal Fever" and similar psychosomatic disease being subjected to expensive, unpleasant and none-too-safe therapy.

Though the removal of Cato Manor and the clean-up of other shack areas has had some effect on the incidence in Africans, in whom the disease is usually blatant and severe, amoebiasis in these people still constitutes a problem. With the introduction, by the Unit, of improved therapy, a high proportion of cases are now treated as out-patients, with a consequent drop in the load on hospitals. Nevertheless, studies of new forms of treatment must continue. In this respect, the Unit is regarded as the final court of appeal by workers all over the world.

During the period under review, four different methods of treatment were tried in Amoebic Dysentery, and six in Amoebic Liver Abscess. Hitherto unsuspected drugs are showing great promise, and a break-through in this field may be anticipated. The cardiotoxicity of various amoebicides was investigated. Several reports on clinical aspects of the disease have been prepared.

The serological test devised by the Unit has now been applied to a very large number of specimens. Not only is this a most useful epidemiological tool, but is of great value in appropriate clinical cases. Interpretation, however, as with many blood-tests in parasitic infections, requires an appreciation of the significance of the result. An extensive study of the antigenic components of the amoeba is in hand, which is aimed at determining the significance of various fractions. With the enormous amount of clinical material available, the Unit is singularly placed for such work, and here too, Durban forms a world centre.

Though there is nothing to add to the previous discovery by the Unit of a harmless amoeba practically indistinguishable from Entamoeba histolytica, morphological and other studies continue. This discovery invalidated practically all the surveys which had been done in many parts of the world.

The cultivation of Entamoeba histolytica in sufficient quantity for our other studies constitutes our greatest technical problem.

Bilharziasis

The main problem with this disease is, strangely enough, also one of perspective. It is not adequately appreciated that the condition is, unlike many other infections, quantitative; and that the probability of serious damage depends on the number of cercariae successfully entering the skin. The worms do not increase in numbers inside the body - one entry means one worm. Furthermore, it is the misplaced egg which causes the lesions. The unmated worms cause little or no damage. The Institute has shown that such uni-sexual infections are much commoner than was previously suspected.

A patient with a single pair of worms will pass eggs, and be labelled as positive; so too will a patient with hundreds of worms, but the ultimate outlook is very different. The patients with a single pair may never know, but the patient with a hundred worms is much more likely to suffer the unpleasant sequelae. As yet there is no method of estimating the number of worms in a patient.

Early studies by the Institute have shown that, despite a high incidence in the local Bantu, bilharzial lesions were very seldom encountered at post-mortem. This led to some conjecture about the 'importance' of the disease. In collaboration with our colleagues in the Pathology Department of the Medical School, a more definitive study was undertaken. On the one hand this showed that though digestion and other studies revealed Schistosoma haematobium in some 30%, and S. mansoni in some 10%, the incidence of sequelae was very low. On the other hand, radiographic study of new cases, showed such distortion of the ureter that eventual recovery seemed impossible. There were thus two conflicting observations which need reconciliation. Either these ureteric lesions in some way recover, or when the children of today come to the autopsy room, there will be a very different picture. The changing ecology, which has meant an astronomical increase in the number of man-water contacts, means not only an increase in the number of people infected, but an increased dose per individual with an increased probability of serious sequelae. The increased interest in water-sports means that the Whites and Indians, who do not have genetic experience of the disease and are thus less tolerant than the Bantu, may well suffer.

Preliminary investigations reveal that the ureteric lesions do show some recovery, but a long-term study is required before any definite conclusions can be drawn. Environmental control, as advocated by the C.S.I.R. Bilharzia Research Unit, is probably the most effective measure. The limited application of this at kwaMashu has paid dividends, as indicated by surveys carried out by the Institute with the assistance of Corporation Health Visitors.

The Institute is not investigating the blood-tests for bilharzia, though ultimately the techniques developed for Amoebiasis and Cystercercosis may be applicable. A note of warning must be sounded against the all-too-common practice of accepting these tests as the answer to diagnostic difficulty. They are neither sensitive nor specific, and may remain positive long after the worms have died, either of old age or as a result of therapy.

At the request of the Co-ordinating Committee for Research in Bilharzia, the Institute for Parasitology has initiated Trials of Therapy, similar to those carried out in Amoebiasis. If funds become available, further pathological studies will be possible.

Cysticercosis

Measles in Cattle and Pigs are the larval forms of the human tapeworm, Taenia saginata and Taenia solium. Animals showing these cysts are either condemned or detained at the abattoirs, and thus constitute a considerable economic loss. Early in our investigation, an anomaly was uncovered, in that the incidence of cysticercosis in pigs is completely out of proportion to the incidence of Taenia solium in man. By comparison with the beef-tapeworm, Taenia saginata, T. solium is rare. There are several possible explanations, and these are being investigated in co-operation with the Veterinary Institute at Onderstepoort.

In the course of these studies, a serological approach was tried, and though this is subject to the limitations mentioned above, it has revealed that an alarming proportion of our Bantu are harbouring cysts of solium type, and that there is a close association between these and the adult-onset epilepsy and other nervous conditions so common in these people.

The difficulty of obtaining enough amoebic material for our serological studies has been mentioned, and for this reason we are using the tapeworm-cysticercosis system as a model for establishing techniques in the separation and purification of antigens. This should lead to more sensitive and specific blood tests, not only in amoebiasis and cysticercosis, but also in other parasitic diseases.

With regard to these studies, the enthusiastic co-operation of the inspection staff at the Durban Abattoir is very much appreciated.

Other Parasites

Though pressure does not permit of specific studies, the Institute is frequently called upon for advice, and is very aware of the numerous untouched problems.

The incidence of both Ascaris lumbricoides the common roundworm and Trichocephalus trichiura the whipworm is, despite the introduction of sanitation, still very high, almost 100% of our Bantu harbouring the latter.

The iron-reserves of the Bantu probably account for their ability to cope with hookworm infection, but pregnant mothers and Indians do show anaemia as a result of infection with this parasite.

Sandworm, which some years ago the Director showed to be the larva of the dog-hookworm, Ankylostoma braziliense, is still prevalent. Owners should have their dogs treated, and should certainly not allow their animals to pollute public places.

Several cases of boil-like lesions due to Cordylobia anthropophaga have been encountered. It would seem that the Tumbu Fly is extending southwards."

II. MALARIA

Five cases of Malaria (4 P.falciparum and 1 P. malariae) were discovered in Durban during 1966, all of whom had been infected outside the Republic of South Africa.

III. RABIES

The whole of the Province of Natal remains a Rabies Infected Area and the movement of immunised dogs only, is allowed into, out of, and within the Province, under permits issued by the State Veterinary Department.

No human cases of rabies were reported but rabies in dogs and other domestic animals continued to be diagnosed in adjoining magisterial districts and Zululand and therefore remains a very definite public health hazard.

Positive diagnoses were made by the Onderstepoort Veterinary Research Laboratories on brain material of 30 dogs, 5 cattle and one cat from Natal. None of these cases, however, emanated from the City itself or the magisterial district of Durban.

The compulsory immunisation of all dogs on reaching the age of six months continued to be enforced. Some 11,000 dogs were immunised in Durban by the State Division of Veterinary Services and private practitioners.

IV. FOOD POISONING

During 1966 four outbreaks of food poisoning were brought to the attention of this Department as detailed in Chapter X. In two of these episodes the causative organism was established while in the remaining two episodes no organisms were found although staphylococcal and salmonella aetiologies were suspected. The epidemiological aspects of a Salmonella paratyphi A food poisoning outbreak warrants further description.

During March 1966 an outbreak of food poisoning in a beach hotel was brought to the notice of this Department by a local private practitioner who treated some 70 cases in the hotel. The onset of symptoms was on the average 6 - 8 hours after consumption of the evening meal, nausea and vomiting played a very prominent rôle although diarrhoea was the commonest symptom. An infective type of food poisoning was suspected. Recovery was fairly rapid in most cases but in a few instances patients were still ill 3 days after the original infection. Only a few specimens of stool and vomit were obtainable together with remnants of the suspect meal. Salmonella paratyphi A was isolated from the vomit of one patient, the stool of another patient and from the gravy of the suspect meal. This outbreak of Salmonella paratyphi A food poisoning would appear to have played not only an infective rôle, but also a toxic rôle, due to the early onset of the illness and the nausea and vomiting produced. Endotoxins produced by Salmonella paratyphi A are capable of such a picture.

It was not established exactly how the food became contaminated with paratyphoid organisms but it was reasonable to assume that one of the kitchen staff who was proved to be excreting the organisms at the time conveyed the bacteria as a result of poor personal hygiene. It should also be mentioned that at this time many cases of Salmonella paratyphi A were occurring in Durban, some of whom were symptom-

less carriers, discovered on routine stool investigation of typhoid contacts.

V. MEDICAL EXAMINATION OF BANTU WORK-SEEKERS

The following numbers of male Bantu work-seekers were examined at the Municipal Bantu Administration Department during 1966 :-

Adults examined	...	98,934
Juveniles examined	...	17,748
Total number examined	..	116,682

X-ray examination of rural male work-seekers seeking work in Durban and male domestic Bantu servants changing their employment within the domestic sphere, continued during the year with the following results :-

Total Bantu X-rayed	13,309
Cases of Active Pulmonary Tuberculosis discovered	74
Cases of presumably inactive Pulmonary Tuberculosis discovered	251

In addition to screening for pulmonary tuberculosis work-seekers were also referred to hospitals and clinics for investigation of other suspect diseases and 1,190 Bantu were referred to the Venereal Diseases Clinic.

On the occasion of their medical examination, all Bantu work-seekers are routinely vaccinated and during the year 101,764 vaccinations were performed.

V. TUBERCULOSIS

INTRODUCTION

The following figures represent the number of cases of pulmonary tuberculosis in Durban as at the end of 1966:-

Race	City cases	Ex-City cases
European	1,298	125
Coloured	1,087	101
Bantu	10,573	2,892
Asiatic	3,363	228
Total	16,321	3,346

These tables do not include cases whose files have been closed. The City cases are those which have been assessed as the financial responsibility of this Municipality while the ex-City cases are those for whom Durban is not financially responsible. The latter group comprise cases living outside the Durban Municipal area but working in Durban as well as country cases who have come to Durban because of their illness and are then found to be suffering from pulmonary tuberculosis while in this City.

STATISTICS OF CITY CASES

(a) Pulmonary Tuberculosis

(i) Notifications

The number of notifications of pulmonary tuberculosis received during the year 1966 is set out below together with the figures for the previous five years. The attack rate per 1000 population is also given.

Year	E	C	B	A	Total
1961	117	96	1,648	416	2,277
1962	129	85	1,524	332	2,070
1963	121	77	1,355	316	1,869
1964	121	110	1,256	479	1,966
1965	100	98	1,336	532	2,066
1966	102	105	1,656	549	2,412

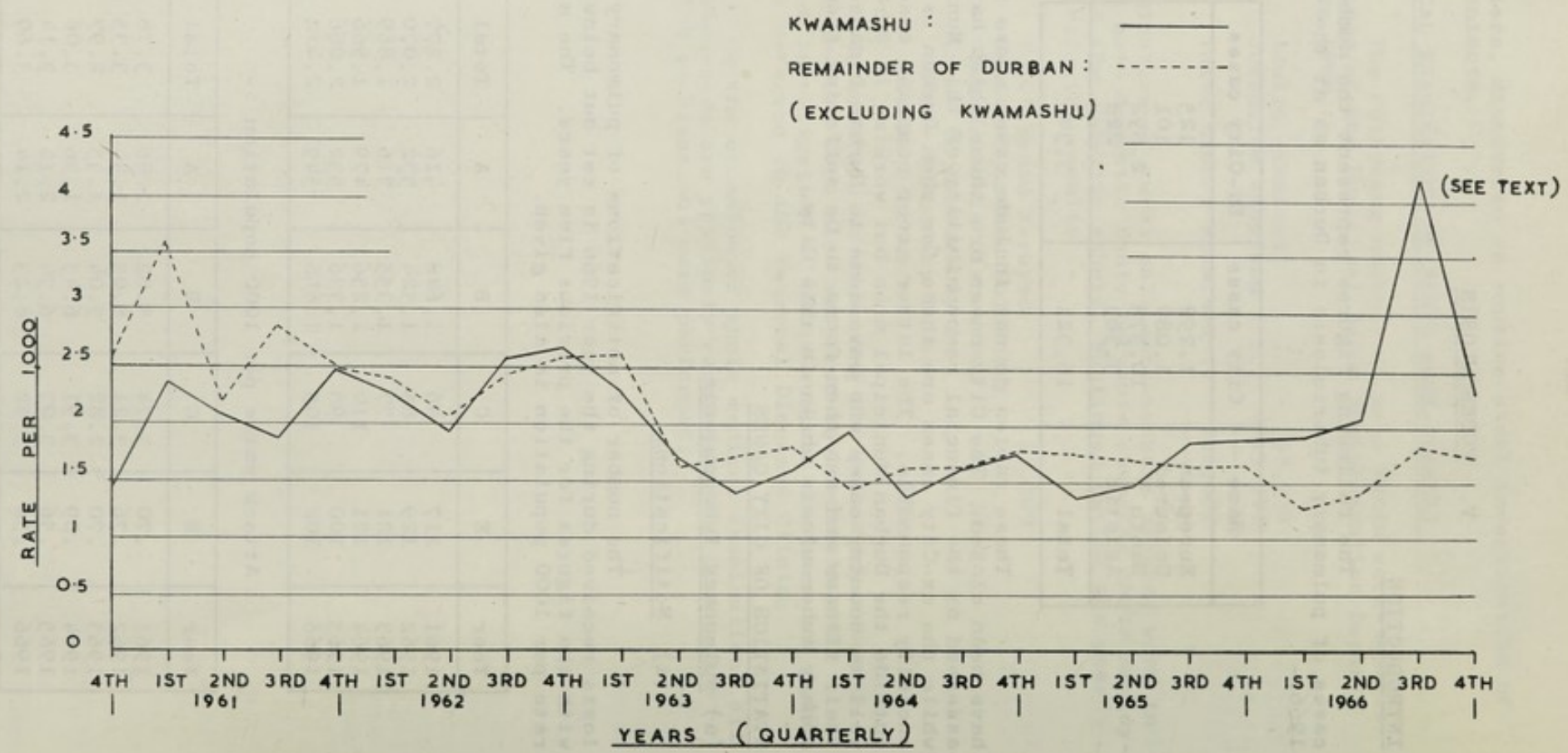
Attack rates per 1000 population :-

Year	E	C	B	A	Total
1961	.70	3.74	8.82	1.86	3.78
1962	.76	3.21	8.03	1.44	3.35
1963	.70	2.82	7.04	1.33	2.97
1964	.69	3.91	6.43	1.96	3.06
1965	.56	3.03	6.74	2.12	3.14
1966	.56	3.52	8.23	2.14	3.60

The age groups of 1966 notified pulmonary tuberculosis cases are as follows :-

PULMONARY TUBERCULOSIS : BANTU

QUARTER YEAR ATTACK RATES (PER 1,000 POPULATION)
IN KWAMASHU AND THE REMAINDER OF DURBAN :
OCTOBER, 1960 TO DECEMBER, 1966



Ages	E	C	B	A	Total
0 - 4 years	3	17	273	73	366
5 - 14 "	3	15	274	66	358
15 - 24 "	7	6	180	129	322
25 - 44 "	36	41	608	185	870
45 - 64 "	40	22	290	79	431
65 and over	13	4	31	17	65
Totals	102	105	1,656	549	2,412

Source of notifications for 1966

Of the 2,412 new pulmonary tuberculosis notifications -
1,883 were notified from Tuberculosis Clinics
519 were notified from hospitals
10 were notified from other sources.

Comment

The total number of notifications is considerably higher than the figure for the previous year and is due, in the main, to an increase in the number of notifications amongst Bantu. The Bantu and Coloured attack rates show an increase whilst the European and Asiatic rates remain on a par with 1965.

The Tuberculosis Clinics account for approximately 75% of notifications whilst the various hospitals are the source of most of the remaining 25%.

The quarter year pulmonary tuberculosis attack rate for Bantu living in the kwaMashu township is shown opposite. The increased rate and in particular the peak shown in the third quarter is mainly due to the commencement of B.C.G. inoculation of Class I school children in this township. Tuberculin testing prior to B.C.G. administration has led to the finding of large numbers of new cases of pulmonary tuberculosis in the 5 - 14 years age group, many of whom are already cases of stabilised pulmonary tuberculosis disease.

(ii) Deaths

Deaths of City cases corrected for inward and outward transfers and the death rate per 1000 population are set out below together with the figures for the previous five years :-

Deaths	E	C	B	A	Total
1961	14	13	129	42	198
1962	14	15	133	37	199
1963	14	6	129	22	171
1964	9	8	108	23	148
1965	15	13	120	30	178
1966	11	10	57	19	97

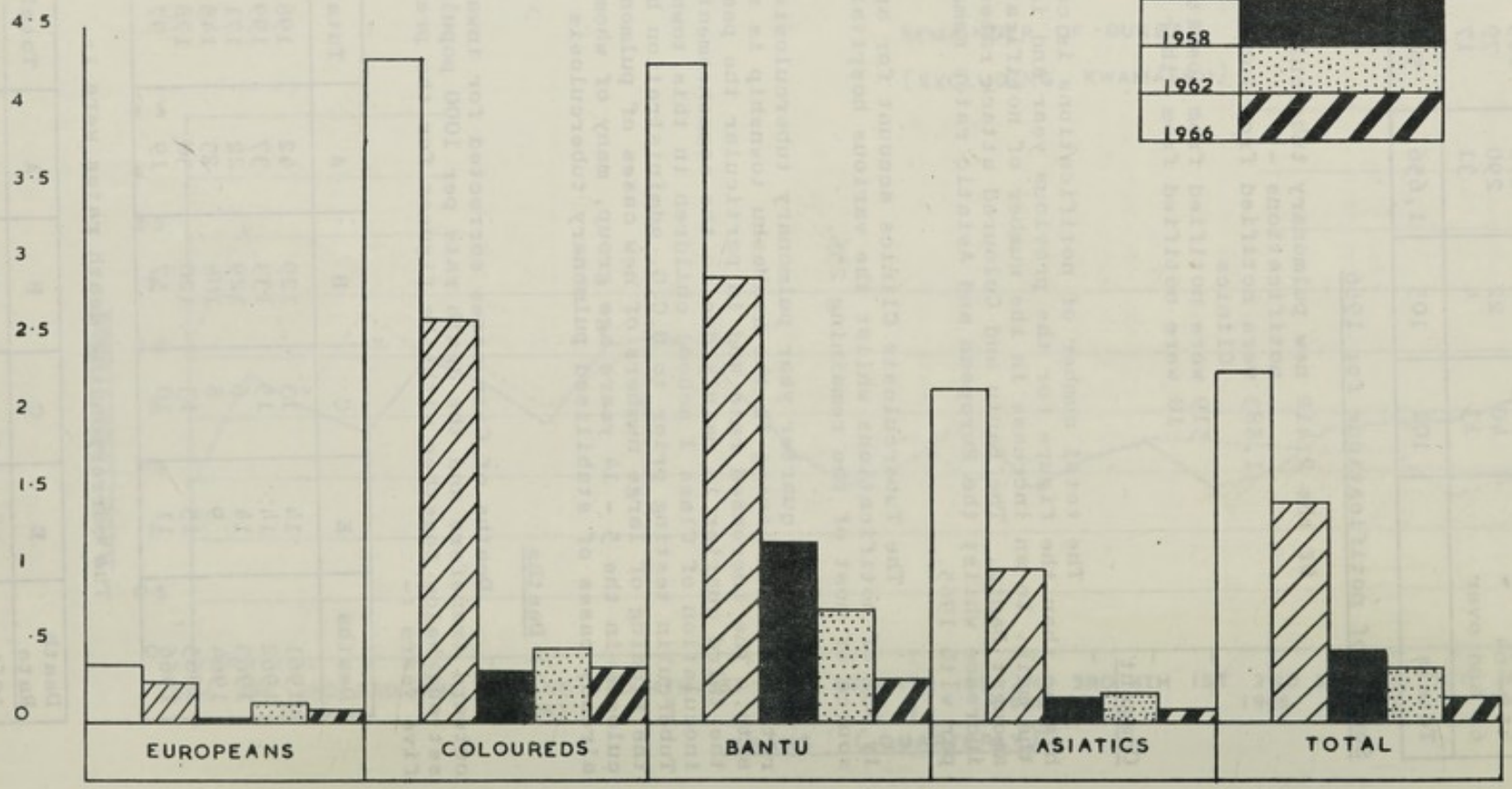
The corresponding death rates were :-

Death Rate	E	C	B	A	Total
1961	.08	.51	.69	.19	.33
1962	.08	.57	.70	.16	.32
1963	.08	.22	.67	.09	.27

PULMONARY TUBERCULOSIS MORTALITY RATES

PER 1000 POPULATION

1946 TO 1966 (AT INTERVALS)



Death rates (Contd.)

Death Rate	E	C	B	A	Total
1964	.05	.28	.55	.09	.23
1965	.08	.44	.60	.11	.27
1966	.06	.33	.28	.07	.14

The overall death rate .14 per 1000 population is a considerably lower figure than in previous years and the marked drop in the death rate for Bantu is notable.

(b) Non-Pulmonary Tuberculosis

(i) Notifications

The total notifications of non-pulmonary tuberculosis are set out below :-

Year	E	C	B	A	Total
1961	1	4	102	44	151
1962	14	5	56	33	108
1963	2	-	50	30	82
1964	6	1	50	44	101
1965	-	2	50	48	100
1966	2	-	46	37	85

These 85 patients have been analysed according to age groups as follows :-

Ages	E	C	B	A	Total
0 - 4 years	-	-	2	-	2
5 - 14 years	-	-	6	2	8
15 - 24 years	-	-	7	6	13
25 - 44 years	1	-	21	20	42
45 - 64 years	1	-	10	8	19
65 and over	-	-	-	1	1
Totals	2	-	46	37	85

Because tuberculosis meningitis cases are usually notified as suffering from pulmonary tuberculosis as well, these notifications are included under the notifications for pulmonary tuberculosis. This would explain why the 0 - 15 years age group contains very few notifications of non-pulmonary tuberculosis.

The conditions most frequently encountered and in order of frequency were tuberculous lymphadenitis, tuberculous meningitis, miliary tuberculosis, tuberculous peritonitis and tuberculosis of the spine.

(ii) Deaths

Deaths and death rates from non-pulmonary tuberculosis for the past six years corrected for inward and outward transfer, are as follows :-

Deaths	E	C	B	A	Total
1961	1	2	32	14	49
1962	-	3	36	11	50
1963	1	-	19	10	30
1964	1	-	28	12	41
1965	1	1	21	5	28
1966	1	5	29	5	40

The corresponding rates were :-

Death Rate	E	C	B	A	Total
1961	,006	.078	.171	.062	.081
1962	-	.113	.190	.048	.081
1963	.006	-	.099	.042	.048
1964	.006	-	.143	.049	.064
1965	.005	.034	.105	.019	.042
1966	.006	.167	.144	.019	.059

HOSPITAL FACILITIES

Natal is divided into four zones for the administration of tuberculosis facilities by the State Health Department, these areas being the Central, Southern, Northern and Zululand zones. Durban falls into the Central zone together with the following areas: Umlazi, Pinetown, Camperdown, Indwedwe and Inanda, Lower Tugela and Mapumulo districts.

The tuberculosis bed capacity of hospitals which are situated in the Central zone are as follows :-

Hospital	E	C	B	A	Total Beds
1. King George V Hospital	82	66	1,282	155	1,585
2. F.O.S.A. T.B. Settlement	-	-	-	186	186
3. Charles James SANTA Centre, Umlazi	-	-	280	-	280
4. Botha's Hill T.B. Settlement	-	-	177	-	177
5. Osindisweni Mission, Verulam	-	-	181	-	181
6. McCord Mission Hospital	-	-	38	-	38
7. St. Mary's Mission, Mariannhill	-	-	73	-	73
8. Umlazi Mission Hospital	-	-	59	-	59
9. Ekuphilisweni Mission, Kearsney	-	-	46	-	46
10. Illovo Sugar Estates Hospital	-	-	43	-	43
11. Montebello Mission Hospital	-	-	90	-	90
12. Umpumulo Mission Hospital	-	-	47	-	47
Totals	82	66	2,316	341	2,805

At the 31st December 1966, these hospitals contained the following numbers of patients who were this City's financial responsibility. This is an increase of 80 patients compared with the previous year.

Hospital	E	C	B	A	Total
1. King George V Hospital	25	42	221	94	382
2. F.O.S.A. T.B. Settlement	Nil	16	6	92	114
3. Charles James SANTA Centre	Nil	Nil	92	Nil	92
4. Botha's Hill T.B. Settlement	Nil	Nil	50	Nil	50
5. Osindisweni Mission	Nil	Nil	35	Nil	35
6. McCord Mission Hospital	Nil	Nil	21	3	24
7. St. Mary's Mission, Mariannhil	Nil	Nil	15	Nil	15
8. Umlazi Mission Hospital	Nil	Nil	9	Nil	9
9. Ekuphilisweni Mission, Kearsney	Nil	Nil	7	Nil	7
10. Illovo Sugar Estates Hospital	Nil	Nil	3	Nil	3
11. Montebello Mission Hospital	Nil	Nil	Nil	Nil	Nil
12. Umpumulo Mission Hospital	Nil	Nil	Nil	Nil	Nil
Totals	25	58	459	189	731

A further 44 Durban cases were hospitalised at hospitals outside the Central zone, e.g. Richmond Hospital (25 Bantu patients) and Dannhauser Hospital (17 Bantu patients) and 34 patients were also accommodated in local Provincial hospitals.

Charles James SANTA Centre: An Assistant Medical Officer of Health of this Department serves on the Management Committee of the above SANTA Centre. The additional Bantu male beds that have been made possible by the opening of this Centre has alleviated the critical bed shortage that existed for this group.

With the rise in the numbers of tuberculotics amongst the Asiatic population in recent years there has been a greater need for more Asiatic beds. Following representations from this Department more beds were made available at King George V Hospital and it is noteworthy that the Superintendent of that hospital in his Annual Report commented that the beds are fully utilised and were indeed most necessary.

Hospital Admissions: During 1966, 1,630 City cases were admitted to various hospitals and comprised 95 Europeans, 82 Coloureds, 1,111 Bantu and 342 Asiatics. This total is higher than the number of admissions for the previous year and applies to all racial groups except the Asiatics where in fact there was a slight decrease in hospital admissions. Discharges of City cases numbered 1,265 and comprised 89 Europeans, 65 Coloured, 830 Bantu and 281 Asiatics. Two hundred and three patients absconded or left hospital against medical advice. This figure is much higher than the figure for the previous year. These cases are immediately followed up by the Health Visitors and Health Assistants of this Department and every endeavour is made to trace them to try and obtain their co-operation for continued treatment. In many instances cases are readmitted to hospital, whilst in others out-patient treatment is established, but there are still many individuals who remain 'treatment' defaulters.

King George V Hospital: This hospital which is situated within the Durban borough is administered by the State Health Department and caters for almost 50% of City cases who are hospitalised for tuberculosis. The following statistics referring to this institution are quoted with the kind permission of the Medical Superintendent.

King George V Hospital	E	C	A	B	Total
Admissions, 1966	357	148	294	2,528	3,327
Discharges, including deaths	345	139	294	2,461	3,239
Deaths	34	22	30	295	381

King George V Hospital	1961	1962	1963	1964	1965	1966
Irregular discharges as a percentage of all discharges	18.5%	12.5%	13%	11%	8.1%	8.7%
Pulmonary tuberculosis "relapse" rate (Ratio readmissions to total admissions)	15.5%	16.75%	16.2%	17%	17.3%	16%

OUTPATIENT SERVICES

There are six clinics at present in the City providing diagnostic and treatment facilities for pulmonary tuberculosis. The Central Durban Chest Clinic situated at Warwick Avenue serves all races, and there are five peripheral clinics administered by this Department situated in the various non-European districts to serve the non-white groups.

The Durban Chest Clinic is presently owned and administered by the State Health Department but during June of 1966 the Secretary for Health approached the Durban City Council with a view to the clinic reverting back to the Durban Corporation, in view of the fact that it was the legal responsibility of this Municipality to administer the clinic. The Durban City Council agreed in principle that all tuberculosis out-patient services in Durban should be operated and maintained by one authority and authorised the City Medical Officer of Health and City Treasurer to investigate the proposal in detail in order to establish the financial and staff aspects and their implications.

(A) Durban Chest Clinic

The following information and statistics have been extracted from the annual report for this clinic by kind permission of the Medical Superintendent:

There was a drop in the number of City cases that attended the clinic during 1966, probably due to the part played by the peripheral tuberculosis clinics in the City; on the other hand there was an increase in the number of ex-City cases that attended.

The increase of over 9,000 in the total attendances for 1966 compared to the year 1965 was largely due to over 8,000 examinations being carried out on work-seekers passing through the Municipal Bantu Influx Bureau.

Of the hospital admissions almost one-third were in respect of readmissions.

Many industrial and other concerns pay the prescribed fee of 20 cents for the screening of prospective employees. Under this scheme 16,197 m.m. X-rays were taken during 1966.

Diagnostic and Treatment Services:

(i) X-Rays

Pre-employment 70 m.m. X-rays	16,197
Influx control 70 m.m. X-rays	13,403
Government Departments	3,004
Mass X-ray of Suspects and Contacts:	
Borough cases	23,102
Ex-borough cases	7,994
Shipping and other firms 100 m.m. and large plate service	4,139
Clinical interviews 100 m.m. and large plate X-rays:	
Borough	28,302
Ex-borough	14,666
Total X-rays taken	110,807

(ii) Notifications

Borough	1,554
Ex-borough	1,246

(iii) Tuberculin Tests

Heaf tests performed	: Borough	4,818
	: Ex-borough	1,582
Heaf tests read	: Borough	3,325
	: Ex-borough	857
Heaf tests found to be positive	: Borough	2,368
	: Ex-borough	535

(iv) B.C.G. Immunisations

Borough	2,272
Ex-borough	499

(v) Streptomycin Injections Given

Borough	17,922

(vi) Other Injections

Borough	517

(vii) Sputum Examinations 9,709 of which 1,350 were positive.

(viii) Admissions from the Clinic to Hospital (Non-Whites)

New cases	1,682
Readmissions	580
Total admissions	2,262

(B) Peripheral Municipal Tuberculosis Clinics

Introduction

This Department operates five peripheral tuberculosis clinics situated at Chatsworth, Merebank, Lamontville, Cato Manor and kwaMashu respectively. The following table reflects the facilities that were available at these clinics during 1966 :

MOBILE T. B. X-RAY UNIT

Clinic	Race	Hours	Days	X-ray Facilities	Hours
kwaMashu	Bantu	9 a.m. to 3 p.m.	Monday to Friday	Available at each clinic each day	9 a.m. to 1 p.m.
Cato Manor	Bantu and Asian	- do -	Mondays only		-do-
Merebank	Asian	- do -	Fridays only		-do-
Chatsworth	Asian	- do -	Tuesdays and Thursdays only		-do-
Lamontville	Bantu	- do -	Wednesdays only		-do-

During July a new mobile 100 m.m. X-ray unit was brought into operation so that there are two such units serving the various clinics. This allows for adequate X-ray coverage at all the clinic venues. Whilst the first mobile X-ray unit is of rather conventional design being a 3-ton vehicle with the patients being X-rayed inside the vehicle, the new unit is a 1½-ton truck of unorthodox design with the patients being X-rayed outside the left-hand side of the vehicle and within a canvas tent which gives privacy for both the operator and the patient.

In view of the expansion of the Chatsworth Indian Township and the decreased attendances at the Cato Manor Chest Clinic due to the demolition of slums in the Cato Manor Emergency Camp area, the Thursday clinic session at Cato Manor was transferred to Chatsworth.

Clinic attendances

The following figures reflect the work performed at these clinics during 1966.

Details	Cato Manor	kwa-Mashu	Mere-bank	Chats-worth	Lamont-ville	Total
No. of sessions	58	251	50	92	51	502
Total attendances	4,422	40,905	7,677	12,261	10,533	75,798
Contacts seen	208	2,155	240	952	984	4,539
Suspects seen	281	2,255	1,458	1,685	1,163	6,842
Tuberculin tests done	329	2,596	1,348	1,634	1,411	7,318
B.C.G. Inoculations	189	3,293	1,097	1,324	592	6,475
Streptomycin injections	389	9,974	105	558	397	11,423
X-rays taken	949	6,700	1,131	2,853	2,540	14,173

There has been a marked increase in the amount of work performed compared with 1965, the total attendances increasing from 63,000 to 75,000. These increased attendances were due in the main to increased work at the Chatsworth, kwaMashu and Lamontville clinics.

All new attendances are interviewed by the medical officer and some are disposed of without being admitted for further investigation. These are persons who cannot be classed as tuberculosis suspects or contacts.

During 1966 the following numbers of persons were admitted to these clinics for the first time:-

Cato Manor	kwaMashu	Merebank	Chatsworth	Lamontville	Total
473	5,747	1,611	2,597	2,174	12,602

Further investigation of these persons yielded the following numbers of cases of pulmonary tuberculosis:-

Cato Manor	kwaMashu	Merebank	Chatsworth	Lamontville	Total
33	754	27	111	146	1,071

Contacts are regularly recalled for X-ray follow-up and prophylactic treatment is given where necessary. Unfortunately many contacts do not return to the clinic for X-ray follow-up as requested.

Defaulters are a particular problem and create much work for the field staff. In the case of the Bantu in particular many of the addresses given even prove to be false when investigated.

The yield of pulmonary tuberculosis cases from contacts and suspects is tabulated hereunder :-

Details	Cato Manor	kwa-Mashu	Mere-bank	Chats-worth	Lamont-ville
Percentage of pulmonary tuberculosis cases discovered among contacts	6%	Not available	4.6%	4.5%	5%
Percentage of pulmonary tuberculosis cases discovered among suspects	2.1%		0.3%	0.7%	1.5%

Tuberculin Testing

The Heaf test, using six needles, is routinely performed on all children under 15 years of age and the table hereunder is an analysis of the results of these tests :-

Tuberculin Tests	Cato Manor	kwaMashu	Merebank	Chats-worth	Lamont-ville
Tests done	329	2,596	1,348	1,634	1,411
Test read	308 (93.3%)	2,078 (80.0%)	1,304 (96.7%)	1,569 (96%)	1,271 (90%)
Positive	154	946	391	576	698
Negative	154	1,132	913	993	573

The percentage of high readings is only obtained after persistently recalling defaulters to the clinic and entails much work on the part of both the clinic staff who prepare the defaulters' lists, and even more so on the field health assistants who have to make the home visits.

All tuberculin negative reactors are inoculated with freeze dried B.C.G. percutaneous vaccine using a 20-needle Heaf gun.

(C) Umhlatuzana Clinic

Local Health Commission is still conducting a clinic in this area although it has been incorporated into the borough of Durban. A few tuberculosis patients residing nearby and who are now the responsibility of this municipality continue to attend at this clinic where facilities have been made available for them by the Local Health Commission.

B.C.G. IMMUNISATION IN DURBAN

Percutaneous freeze dried B.C.G. vaccine which is supplied free of charge by the State Health Department is used and the method of administration is with the 20-needle Heaf gun.

B.C.G. immunisation is programmed on three fronts, viz: (a) all newborns at King Edward VIII, McCord Zulu, and St. Aidan's Hospitals are given B.C.G. prior to discharge; (b) immunisation is carried out at all the tuberculosis clinics; and (c) immunisation of tuberculin negative reactors is given at various non-European schools and according to the following scheme :-

(i) Bantu - all Class I, Standard VI and Standard X pupils. (Average ages being 7 years, 14 years and 20 years respectively.)

(ii) Asiatics - all Class I and Standard VIII pupils. (Average ages being 6 years and 16 years respectively).

However, staff shortages make it impossible to complete the school programme each year.

The total number of immunisations administered during 1966 in this City was made up as follows :-

Newborns at King Edward VIII Hospital	12,171
" " McCord Zulu Hospital	1,541
" " St. Aidan's Mission Hospital	2,249
Municipal Tuberculosis Clinics	6,475
Durban Chest Clinic	2,272
Various Non-European Schools	4,182
	28,890

FIELD WORK AND CONTROL PROGRAMMES

The field staff responsible for this control work is made up of 5 European Health Visitors, 1 European Health Inspector, 16 Bantu and 8 Asiatic Health Assistants. An administrative clerical staff of 4 European and 1 Bantu are required for the compilation of the vast amount of clerical work that is entailed.

Home visits for 1966 totalled 64,101, comprising 4,371 visits to Europeans, 3,092 visits to Coloureds, 37,297 visits to Bantu and 19,341 visits to Asiatics. This total is an increase of 8,000 compared to the previous year and shows the increased effort that has been made on the part of the field staff to cope with the immense amount of work which is increasing with each passing year. This field work entails investigating new cases, tracing old cases, contacts and defaulters to ensure their regular attendance at clinics, as well as helping patients and their families in the various social problems that arise. The increased number of home

visits reflected among the Bantu and Asiatic groups is due to an internal re-organisation which has enabled more work to be performed.

SUPPLEMENTARY FEEDING OF INDIGENT TUBERCULOSIS CASES

This feeding scheme is subsidised by the State Health Department who lay down various stipulations regarding the administration and distribution of these food parcels. The parcels are distributed at the various clinics and help to encourage patients to attend regularly.

There was a slight increase in the number of rations distributed, 8,344 compared with 8,199 in 1965. The total cost was R8,429 as against R8,077 in 1965. These rations are made up mainly of foods of high nutritional value and include dried milk powder, tinned meats, fortified maize products and fats. The following table reflects the rations distributed during 1966 :-

Age Group (Years)	European		Coloured		Asiatic		Bantu		Total	
	Patients	Rations	Patients	Rations	Patients	Rations	Patients	Rations	Patients	Rations
0 - 4 years	-	-	8	159	-	-	11	251	19	410
5 - 8 "	-	-	5	144	8	273	11	256	24	673
9 - 12 "	-	-	2	29	2	83	1	30	5	142
13 and over	8	205	39	1144	51	1902	163	3868	261	7119
Totals	8	205	54	1476	61	2258	186	4405	309	8344

DOMICILIARY ASSISTANCE

The Natal Anti-Tuberculosis Association makes assistance available for tuberculosis patients and their families. A special Care Committee upon which the five European Health Visitors of the City Health Department serve meets monthly to allocate various grants. In view of the large number of recipients, the cash grant available to tuberculosis patients and their families is of necessity very small. Other help in the form of food, milk, butter and eggs is also provided by this Association. Amounts expended during the last four years on care work are :-

1963 ... R14,683
1964 ... R15,635
1965 ... R16,290
1966 ... R17,325

It will be seen how the amount of money available each year has steadily increased and the tearoom operated by the Natal Anti-Tuberculosis Association in Botanic Gardens has been responsible for making extra amounts of money available.

VI. VENEREAL DISEASES

INTRODUCTION

The clinics for venereal diseases continued to function satisfactorily throughout the year, the overall attendances varying slightly throughout the year. The figures quoted in this report refer only to those cases treated at the Municipal Non-European Clinics and the clinic at Addington Hospital. No record is available of cases treated at other institutions, by district surgeons or private practitioners who are not required to make any return to the local authority.

NEW CASES

The total number of new cases shows an increase of 9% over the previous year (18,935 to 17,367) but the increase in the overall incidence rate of venereal disease is not regarded as significant.

TOTAL ATTENDANCES

These show an increase of 11% over the previous year (53,158 compared to 47,922).

CLINIC SERVICES

Addington: One session is held at Addington Hospital each day for European and Coloured cases, in premises apart from the normal outpatient department but within the hospital precincts. The clinic is administered and staffed by the Provincial Hospital which is reimbursed on a per capita basis by the Durban Corporation in respect of City cases. Attendances during the year were as follows :-

Race	New Cases			Total Attendances		
	M	F	Total	M	F	Total
European	984	127	1,111	3,585	456	4,041
Coloured	349	47	396	1,546	268	1,814

Congella and kwaMashu: The Congella Clinic is situated in the grounds of the King Edward VIII Hospital, utilising hospital buildings, but administered and staffed by the City Health Department. The clinic is open throughout the normal working hours, with a late session once per week, and together with the kwaMashu Clinic, serves the Bantu and Asiatic communities.

The kwaMashu Clinic operates at Rydalvale in the centre of the kwaMashu Bantu Township for one morning session of 2 - 3 hours per week, which is sufficient for the number of patients who attend. Attendances at Congella and kwaMashu Clinics during 1966 were as follows :-

Race	New Cases			Total Attendances		
	M	F	Total	M	F	Total
Bantu	11,616	4,954	16,570	32,911	12,454	45,365
Asiatic	666	292	958	1,461	477	1,938

WARD ADMISSIONS

There are two wards for patients suffering from venereal diseases at Clairwood Hospital, consisting of 19 male and 19 female beds. During the year 369 males and 993 females were admitted to hospital. This total of 1,362 admissions is substantially more than last year's figure of 991 admissions.

CONTACTS

The tracing of contacts continues to be fairly satisfactory and over 30% of the contacts are traced and attend the clinic for investigation and treatment.

SIDEROOM

In order to establish an early diagnosis, microscopic examinations of all discharges are carried out in the sideroom at every clinic session. The following examinations were performed at Congella Clinic :-

Smears	...	17,563
Urines	...	2,985

LABORATORY

The following serological examinations were carried out at the Government Laboratories, Currie Road :-

Kolmer V.D.R.L.	23,962

ANTE-NATAL CASES

Ante-natal cases totalling 962 were referred to the Special Clinic for serological examinations, and all the positive cases were treated.

LYMPHOGRANULOMA VENEREUM

Last year's annual report made mention of a special survey to establish the prevalence of this disease in Durban. Due to various laboratory, staff and other difficulties it was not possible to complete the survey as desired but the following points will be of interest.

1. Cases have been treated adequately with penicillin and sulphonamide only.

2. Complement fixation tests performed at the South African Institute for Medical Research have not given any definite positive results for Lymphogranuloma venereum but have brought to light a fair number of weak positives (1/5th dilution) for psittacosis.

   Complement fixation tests performed by State Health Laboratories in Durban, using "Lederle" L.G.V. antigen, have given positive results for lymphogranuloma venereum. Unfortunately it has not been possible to evaluate the full implications of these findings.

3. Eye swabs taken in a few cases have been positive for Tric virus. In those instances where the serum was not anti-complementary, positive Tric isolations were associated with a weak positive complement fixation test for psittacosis (1/5th). This is probably an incidental finding, although common antigenic proper-

ties between Tric virus and psittacosis virus should be considered as a possibility.

4. It is hoped to continue with this investigation.

STATISTICAL SUMMARY (ALL RACES) TREATED IN 1966

Details	European				Coloured				Bantu				Asiatic				Total
	City		Ex-City		City		Ex-City		City		Ex-City		City		Ex-City		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
New cases	607	120	377	7	289	45	60	2	9,186	2,685	2,430	2,269	600	164	66	28	18,935
Total attendances	2,654	449	931	7	1,402	265	144	3	26,698	7,114	6,213	5,340	1,315	431	146	46	53,158
Hospital admissions	-	-	-	-	-	-	-	-	256	631	92	351	21	9	-	2	1,362

Venereal Diseases among Bantu and Asiatics 1966

Details	New Cases		Total Attendances	
	M	F	M	F
1. Sero-Negative Primary Sy.	1,048	63	2,401	116
2. Sero-Positive Primary Sy.	417	61	2,416	203
3. Secondary Sy.	245	721	517	1,384
4. Tertiary Sy. (Recognised clinically)	5	-	21	1
5. Latent Sy. (Diagnosed on result of serological test alone)	514	830	3,305	2,800
6. Neuro-Syphilis	-	-	-	-
7. Congenital Sy. (Under 1 year)	44	44	127	120
8. Congenital Sy. (Over 1 year)	17	18	54	40
Total Syphilis	2,290	1,737	8,841	4,664
9. Gonorrhoea	4,718	571	8,694	977
10. G.C. Vulvo-Vaginitis	-	5	-	12
11. G.C. Ophthalmia	7	6	10	12
Total G.C. Infections	4,725	582	8,704	1,001
12. Ulcus Molle	909	70	2,347	142
13. Lymphogranuloma venereum	141	17	452	36
14. Granuloma Inguinale	4	-	10	-
15. Venereal Warts	560	126	2,319	448
16. Non-specific Urethritis	3,586	3,385	8,287	5,766
17. Non-Venereal	807	189	4,989	1,765
Total	6,007	3,787	18,404	8,157
GRAND TOTAL	13,022	6,106	35,949	13,822

VII. IMMUNISATION

The prevention of disease is one of the most important duties of a health department and immunisation plays a major role in achieving this, especially in the case of such serious diseases as smallpox, poliomyelitis, diphtheria and tetanus.

Facilities are provided at the 37 child health clinic venues scattered over the City, including the Indian and Bantu Townships, for the immunisation of pre-school children against smallpox, poliomyelitis, diphtheria, whooping cough and tetanus. In addition all Durban creches, play centres, nursery schools, infant and primary schools are visited each year to ensure that all children up to the age of 10 years are adequately immunised against these diseases. Finally purpose-designed mobile immunisation clinic vehicles are used to visit the Indian and Bantu townships as well as those areas in the City where no clinic facilities are available in order to immunise children who do not attend clinics, creches and play centres or have not yet reached school-going age.

A record is kept of all births and when these infants reach the age of 3 months, parents are informed by postcard of the importance of protection against disease by immunisation and advised to visit the nearest clinic or their own private doctor for this purpose.

Selected food handlers undergo blood tests for the detection of the typhoid carrier state (Vi-tests) and are immunised against typhoid and paratyphoid A and B.

Tuberculin testing and B.C.G. vaccination is also undertaken as described elsewhere in this report.

Smallpox and Poliomyelitis Immunisation Campaign

Because of the importance of achieving a high degree of immunity against poliomyelitis in the local population it was decided to supplement the facilities for immunisation provided at the immunisation clinics by using a purpose-designed mobile clinic vehicle which could visit all areas of the Townships and the City in order to bring these facilities to the people. This mobile clinic was ably assisted by lecturers from the Health Education Section who, immediately before the mobile clinic visited a particular area, explained the importance of immunisation against poliomyelitis to the public, using loudhailers and public address equipment with excellent response.

Commencing in January 1966 the mobile clinic systematically covered kwaMashu, Chesterville, Lamontville and Umlazi Glebe Bantu Townships and a similar campaign was commenced in Chatsworth Indian Township during September 1966. In the course of this programme many children were discovered who had not been successfully vaccinated against smallpox and all persons who did not bear the scars of successful smallpox vaccination were vaccinated. The migrant nature of the Bantu population of the Townships with their constant movement to and from the Bantu homelands and even beyond the borders of the Republic, plus the presence of many Bantu visitors, both legal and illegal, poses the constant threat of the introduction of smallpox which can only be overcome by continued vigilance and vaccination of susceptibles.

MOBILE IMMUNISATION CLINIC

New Mobile Immunisation Vehicle

The mobile immunisation clinic proved to be so successful that a second purpose-designed vehicle was designed and put into service during July 1966.

It is constructed on a low chassis with double layered insulated aluminium walls and roof. Fixed seats, which double as lockers, run lengthways on each side, with a fixed table for recording clerks, a folding table, and a stainless steel sink and draining board built into a cupboard (similar to a kitchen unit) for the immunising nurses.

Patients enter by means of folding steps at the rear of the vehicle, are immunised and issued with certificates, and leave via a door at the front left side of the vehicle.

Vaccination Against Smallpox

Routine vaccination against smallpox proceeded at clinics and in conjunction with the poliomyelitis immunisation campaign in the Indian and Bantu Townships.

The figures for the year are shown in the following table:

Smallpox Vaccinations	E	C	B	A	1966 Total	(1965 Total)
Primary vaccinations	4,171	2,647	12,195	11,687	30,700	28,852
Re-vaccinations	228	294	1,172	2,025	3,719	53,719
Totals	4,399	2,941	13,367	13,712	34,419	82,571

Although the total number of vaccinations against smallpox was less than half the total for the preceding year, there was an increase in the number of primary vaccinations performed.

In addition to the above, 101,764 Bantu work-seekers were vaccinated against smallpox at the Bantu Administration Department offices giving a grand total of 136,183 persons vaccinated against smallpox during the year.

This figure does not include the vaccinations performed by private medical practitioners in Durban or the vaccinations for international travel purposes performed by the District Surgeon and Port Health Officer, and the compulsory vaccination of prisoners routinely undertaken in the City gaols.

Combined Diphtheria, Whooping Cough and Tetanus Immunisation

Of the 54,447 doses of combined diphtheria whooping cough and tetanus vaccine administered during the year at clinics, creches, play centres, nursery schools and schools, 44,999 doses were administered to children in the under 1 year old age group. The details are summarised in the following table:

Details of Combined Diphtheria, Whooping Cough and Tetanus Immunisations:

Age Group	DWT Dose	E	C	B	A	1966 Total	(1965 Total)
Under 1 year	1st dose	2,398	1,470	6,033	7,936	17,837	(18,609)
	2nd dose	2,290	1,295	3,987	7,123	14,695	(13,725)
	3rd dose	2,107	1,253	3,044	6,063	12,467	(10,705)
	Booster	-	-	-	-	-	-
	Total	6,795	4,018	13,064	21,122	44,999	(43,039)
1 - 6 years	1st dose	203	83	981	436	1,703	(1,580)
	2nd dose	129	83	869	426	1,507	(1,384)
	3rd dose	236	94	807	691	1,828	(1,547)
	Booster	792	1,121	833	1,622	4,368	(273)
	Total	1,360	1,381	3,490	3,175	9,406	(4,784)
School age	1st dose	-	-	-	-	-	(140)
	2nd dose	-	2	-	-	2	(6)
	3rd dose	-	2	-	-	2	(25)
	Booster	11	13	7	7	38	(26)
	Total	11	17	7	7	42	(197)
Total All Ages	1st dose	2,601	1,553	7,014	8,372	19,540	(20,329)
	2nd dose	2,419	1,380	4,856	7,549	16,204	(15,115)
	3rd dose	2,343	1,349	3,851	6,754	14,297	(12,277)
	Booster	803	1,134	840	1,629	4,406	(299)
GRAND TOTAL		8,166	5,416	16,561	24,304	54,447	(48,020)

There was a satisfactory increase in the combined DWT injections over the figure for the previous year.

Combined Diphtheria and Tetanus Immunisation

Infant and primary schools in the Durban area were visited by the two schools immunisation teams to immunise and give booster doses against diphtheria and tetanus to children up to the age of 10 years. Details are summarised as follows:-

Details of Combined Diphtheria and Tetanus Immunisation

Age Group	DT Dose	E	C	B	A	1966 Total	(1965 Total)
Under 1 year	1st dose	23	38	134	37	232	(278)
	2nd dose	7	29	75	13	124	(159)
	3rd dose	9	33	48	7	97	(169)
	Booster	-	-	-	-	-	-
	Total	39	100	257	57	453	(606)
1 - 6 years	1st dose	153	163	1,557	1,521	3,394	(2,876)
	2nd dose	101	117	976	1,085	2,279	(2,208)
	3rd dose	123	112	646	864	1,745	(1,450)
	Booster	1,720	1,394	894	2,721	6,729	(2,151)
	Total	2,097	1,786	4,073	6,191	14,147	(8,685)
School Age	1st dose	391	368	1,684	6,157	8,600	(12,967)
	2nd dose	308	330	1,434	5,712	7,784	(12,631)
	3rd dose	204	233	1,143	6,059	7,639	(10,391)
	Booster	2,860	665	64	1,968	5,557	(6,335)
	Total	3,763	1,596	4,325	19,896	29,580	(42,324)
Total All Ages	1st dose	567	569	3,375	7,715	12,226	(16,121)
	2nd dose	416	476	2,485	6,810	10,187	(14,998)
	3rd dose	336	378	1,837	6,930	9,481	(12,010)
	Booster	4,580	2,059	958	4,689	12,286	(8,486)
GRAND TOTAL		5,899	3,482	8,655	26,144	44,180	(51,615)

Tetanus Immunisation

Of the 11,628 doses of tetanus prophylactic vaccine given during the year 11,568 doses were administered to children up to 10 years old and 60 doses to adults as shown in the following table:

Age Group	Tetanus Dose	E	C	B	A	1966 Total	(1965 Total)
School age up to 10 years	1st dose	256	134	808	1,246	2,444	(3)
	2nd dose	204	95	726	1,083	2,108	(-)
	3rd dose	46	11	33	45	135	(-)
	Booster	2,363	1,092	177	3,247	6,879	(8)
	Total	2,869	1,332	1,744	5,621	11,566	(11)
Adults	1st dose	6	-	-	7	13	(5)
	2nd dose	6	-	-	4	10	(-)
	3rd dose	1	-	-	-	1	(-)
	Booster	35	-	-	1	36	(-)
	Total	48	-	-	12	60	(5)
Grand Totals		2,917	1,332	1,744	5,633	11,628	(16)

The number of doses of tetanus prophylactic vaccine administered during the year greatly exceeds the number of doses administered during the previous year. This big increase occurred when tetanus P.T.A.P. vaccine was made freely available to local authorities by the State Health Department. The majority of doses were administered to school children in the 8 to 10 year old age group with the object of affording protection to these children against tetanus for the remainder of their school careers.

Immunisation against Poliomyelitis

The doses of poliomyelitis oral vaccine given to the various race groups are summarised in the following table:

Details of Immunisation Against Poliomyelitis

Age Group	Dose	E	C	B	A	1966 Total	(1965 Total)
Under 1 year	1st dose	3,158	1,418	7,288	7,932	19,796	(16,633)
	2nd dose	2,977	1,283	4,114	6,578	14,952	(12,406)
	3rd dose	2,780	1,130	2,640	5,247	11,797	(9,160)
	Total	8,915	3,831	14,042	19,757	46,545	(38,199)
1 - 4 years	1st dose	485	353	9,887	2,699	13,424	(5,487)
	2nd dose	616	308	5,947	3,147	10,018	(4,490)
	3rd dose	1,249	486	3,517	3,973	9,225	(4,536)
	Total	2,350	1,147	19,351	9,819	32,667	(14,513)
5 - 9 years	1st dose	234	151	3,912	1,588	5,885	(2,712)
	2nd dose	268	126	2,292	1,555	4,241	(1,074)
	3rd dose	730	141	1,201	2,174	4,246	(886)
	Total	1,232	418	7,405	5,317	14,372	(4,672)
10-19 years	1st dose	136	60	161	1,237	1,594	(982)
	2nd dose	108	59	46	1,883	2,096	(730)
	3rd dose	375	70	11	2,884	3,340	(1,077)
	Total	619	189	218	6,004	7,030	(2,789)
Over 19 years	1st dose	489	27	1,153	669	2,338	(890)
	2nd dose	420	7	232	595	1,254	(431)
	3rd dose	722	64	299	1,350	2,435	(375)
	Total	1,631	98	1,684	2,614	6,027	(1,696)
Total All Ages	1st dose	4,502	2,009	22,401	14,125	43,037	(26,704)
	2nd dose	4,389	1,783	12,631	13,758	32,561	(19,131)
	3rd dose	5,856	1,891	7,668	15,628	31,043	(16,034)
Grand Total		14,747	5,683	42,700	43,511	106,641	(61,869)

The great increase in the number of doses of Poliomyelitis oral vaccine administered during the year, compared with the number for the previous year, is largely attributable to the use of the two purpose-designed mobile immunisation clinics in the Indian and Bantu Townships on a house-to-house basis throughout the year over and above the routine immunisations at child health clinics.

Typhoid Control in Food-handlers

Clinics were held twice a week throughout the year for Vi-tests to be performed on selected food-handlers and for the administration of the combined typhoid, paratyphoid A and B vaccine, details of which are shown in the following table:

Vi-tests	E	C	B	A	1966 Total	(1965 Total)
Blood samples	21	3	889	35	948	(833)
Positive results	-	-	-	-	-	(-)

Combined TAB Vaccine	E	C	B	A	1966 Total	(1965 Total)
1st dose	62	6	852	42	962	(924)
2nd dose	27	6	592	115	740	(778)
Booster dose	33	3	420	30	486	(520)
Total	122	15	1,864	187	2,188	(2,222)

VIII. MATERNAL AND CHILD HEALTH

A. STAFF

The establishment of the Maternal and Child Health Section includes posts for full-time and part-time clinical medical officers, health visitors, clinic sisters, nurses, clinic assistants and interpreter cleaners, who staff the maternal and child health, immunisation and ante-natal clinic venues scattered over the City and including the Indian and Bantu townships.

In addition, health visitors undertake home visiting, inspection of crêches, play centres and nursery schools.

Details of the staff establishment of the Maternal and Child Health Sections are shown in the table below:-

Post	E	C	B	A	1966 Total	(1965 Total)
Senior Clinical Medical Officer	1	-	-	-	1	(1)
Clinical Medical Officer	1	-	-	-	1	(1)
Part-time Medical Specialist	1	-	-	-	1	(1)
Part-time Clinical Medical Officer	5	-	-	-	5	(5)
Chief Health Visitor	1	-	-	-	1	(1)
Deputy Chief Health Visitor	1	-	-	-	1	(1)
Senior Health Visitor	1	-	1	1	3	(3)
Health Visitor	22	2	16	6	46	(46)
Clinic Sister	5	-	-	-	5	(5)
Nurse	-	-	3	8	11	(9)
Clinic Assistant	12	-	-	-	12	(12)
Nurse Aids	-	2	10	18	30	(30)
Overseer	-	-	-	1	1	(-)
Health Assistant	-	-	4	4	8	(8)
General Assistant	1	-	-	1	2	(1)
Interpreter/Cleaner	-	-	6	6	12	(12)
Totals	51	4	40	45	140	(136)

B. INFANTILE MORTALITY RATE

The steady decline in the mortality rate in infants has been maintained in Durban and is shown in the following table which represents the number of deaths in infants under the age of one year per 1000 live births during the past 9 years:-

Year	E	C	B	A	Total
1958	28.58	48.40	275.11	71.66	138.99
1959	23.36	45.41	276.64	57.43	130.52
1960	25.42	50.51	246.42	59.46	118.37
1961	20.34	49.52	167.10	58.99	87.26
1962	27.33	49.62	148.20	54.77	82.63
1963	24.31	47.43	108.63	53.90	71.34
1964	24.64	44.48	104.60	54.50	69.99
1965	25.99	46.82	116.67	48.87	72.56
1966	25.44	37.76	107.18	42.00	64.30

This steady decline in the infantile mortality rate is a creditable reflection on the public health standards maintained in Durban in regard to maternal and child health, but there still remains considerable room for improvement, especially in the case of Bantu infant deaths.

CAUSES OF DEATHS OF INFANTS IN DURBAN IN 1966 (UNDER 1 YEAR)

The main causes of deaths in infants under the age of 1 year are listed in the following table in order of importance.

No.	Cause of Death	E	C	B	A	1966 Total	(1965 Total)
1.	Immaturity and ill-defined diseases peculiar to early infancy.	34	14	174	89	311	(331)
2.	Ill-defined and unknown causes of morbidity and mortality (including natural causes in the case of Bantu infants).	9	4	246	14	273	(277)
3.	Gastro-enteritis and colitis.	6	5	169	70	250	(344)
4.	Pneumonias (lobar, broncho-, atypical etc.)	4	12	93	67	176	(220)
5.	Infections of the new-born.	5	2	51	37	95	(83)
6.	Birth injuries.	5	1	28	22	56	(42)
7.	Post natal asphyxia and atelectasis.	8	3	31	8	50	(58)
8.	Congenital abnormalities.	11	3	9	11	34	(33)
9.	Measles.	-	2	22	7	31	(35)
10.	Non-meningococcal meningitis.	-	2	14	10	26	(28)

Comment

Immaturity is the main cause of death in infancy and is governed by such factors as multiple births, disturbances in the ovum (e.g. monstrosities), toxaemia of pregnancy, placenta praevia and other obstetrical conditions beyond the control of this Department. However, this does serve to emphasize the importance of facilities including special equipment and trained staff for dealing with the premature infant in hospitals and nursing homes.

The next largest cause of death includes all the undiagnosed Bantu infant deaths from natural causes, the bulk probably being due to pneumonia and gastro-enteritis.

Gastro-enteritis is a major cause of death, most of these deaths occurring in the Bantu. The majority of the cases are probably due to ignorance of hygienic measures and unsatisfactory environmental conditions. Instruction on the preparation and sterility of artificial feeds and the use of pasteurised milk as well as cleanliness and fly control, is given at all the Municipal Child Health Clinics, and the reduction in the incidence of gastro-enteritis has materially decreased the infantile mortality rate. However, it is obvious that even greater efforts are required to lower the incidence of this disease.

C. CAUSES OF DEATH IN RESPECT OF INFANTS AND CHILDREN UNDER THE AGE OF 5 YEARS

Of the 1,957 deaths in respect of infants and children under the age of 5 years notified during 1966, and classified according to the "International Intermediate List of 150 Causes" from the "Seventh Revision of the World Health Organisation, 1948", 422 deaths are classified as "Ill Defined" and include all the Bantu deaths from natural causes which were not medically certified. It is therefore not

possible to investigate this group which is probably made up largely of Bantu deaths due to pneumonias and gastro-enteritis.

The following table shows the principal causes of death in infants and children under 5 years where it was possible to ascertain the nature of the cause of death from the information given on death certificates, and listed in order of importance. The trend in regard to infantile deaths (under 1 year only) is reflected in the accompanying graph.

Deaths in Infants and Children Under 5 Years, 1966:-

No.	Cause of Death	E	C	B	A	Total
1	Gastro-enteritis	6	6	224	95	331
2	Immaturity and other causes peculiar to early infancy	34	14	174	89	311
3.	Broncho-pneumonia	7	13	145	109	274
4	Infections of the newborn	5	2	51	37	95
5	Measles	0	6	48	35	89
6	Birth injuries	5	1	28	22	56
7	Post-natal asphyxia and atelectasis	8	3	31	8	50
8	Non-meningococcal meningitis	0	2	21	13	36
9	Congenital malformations	13	3	9	11	36
10	Lobar and unspecified pneumonia	0	3	18	11	32
11	Malnutrition including kwashiorkor	0	1	27	3	31
12	Tuberculosis - all forms	0	2	20	4	26
13	Bronchitis	1	0	6	7	14
14	Motor vehicle accidents	0	4	3	5	12
15	Tetanus	0	0	9	1	10
16	Diphtheria	0	1	3	4	8

Gastro-enteritis is the biggest killer in the under 5 years age group and instruction on its causes and prevention and the importance of early treatment is given at the child health clinics.

Measles occupies fifth place and surpasses such diseases as tuberculosis, tetanus and diphtheria which only appear towards the end of the list, holding 12, 15 and 16th places respectively. Like tetanus and diphtheria, measles can now be prevented by immunisation, and it is to be hoped that measles vaccine will be made available to local authorities by the State Health Department in the not too distant future.

D. MATERNAL HEALTH

(a) Antenatal Clinics

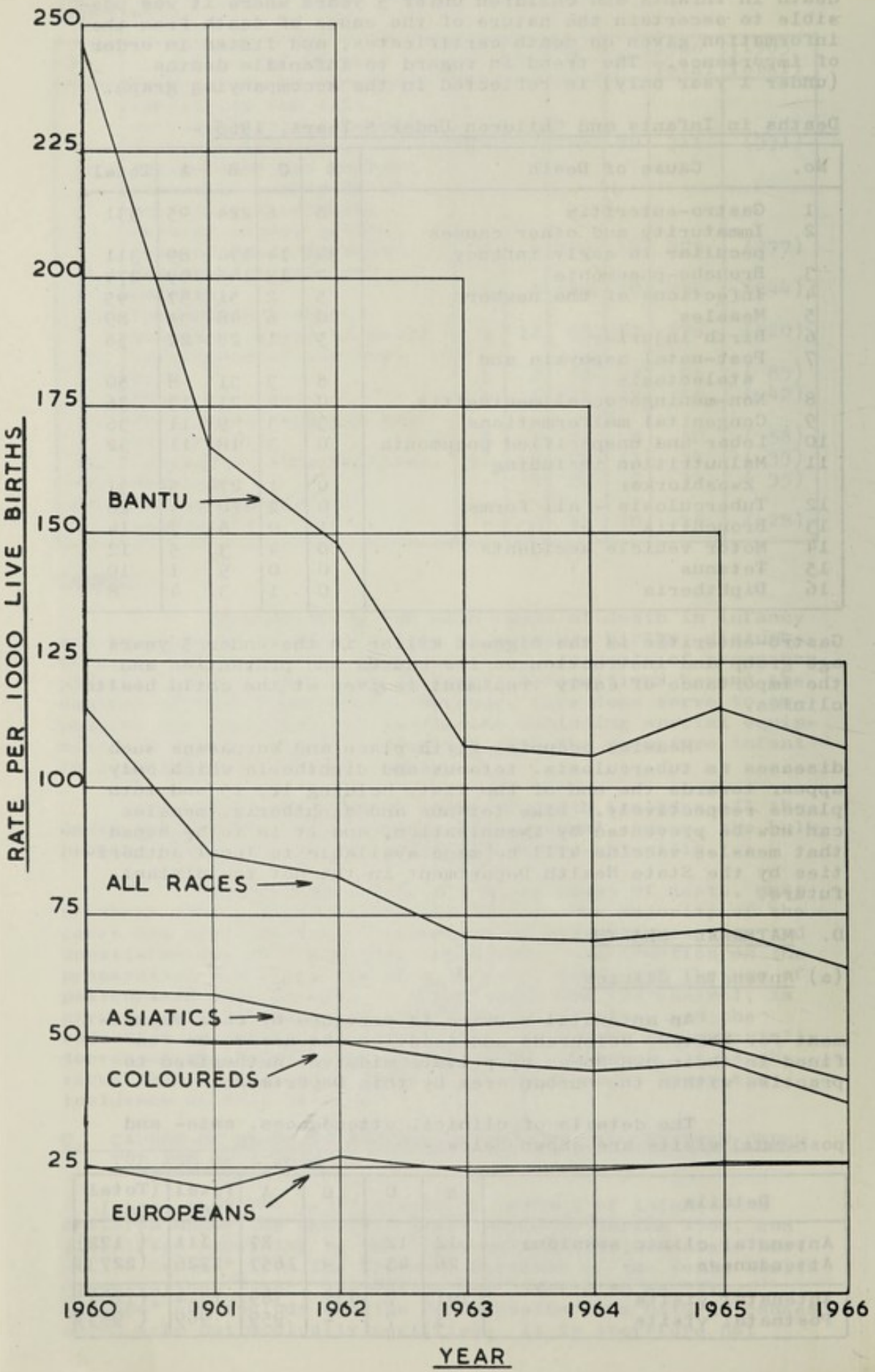
An antenatal service is provided by this Department for Whites, Coloureds and Asiatics who are to be confined in their own homes by private midwives authorised to practise within the Durban area by this Department.

The details of clinics, attendances, ante- and post-natal visits are shown below:-

Details	E	C	B	A	Total 1966	(Total 1965)
Antenatal clinic sessions	12	12	-	87	111	(122)
Attendances	26	43	-	1657	1726	(2273)
Antenatal visits	191	7	737	389	1324	(1204)
Postnatal visits	3	7	-	959	969	(983)

INFANT MORTALITY RATES

DURBAN 1960-1966



(b) Facilities for Maternity Cases

Accommodation for maternity cases is provided by the following Provincial Hospitals, Nursing Homes and Private Hospitals:-

(i) European Maternity Beds

Addington Hospital (Provincial)
Mothers' Hospital (Private)

Each includes a District Midwifery Service.

Maternity cases are also accepted at St. Augustine's Hospital and Parklands Nursing Home (both Private) and they provide no District Midwifery Services.

(ii) Coloured Maternity Beds

Addington Hospital (Provincial)
McCord's Zulu Hospital (Private)

Each includes a District Midwifery Service.

(iii) Bantu and Asiatic Maternity Beds

King Edward VIII Hospital (Provincial)
McCord's Zulu Hospital (Private)

Each includes a District Midwifery Service.

The Polyclinic (Provincial) at kwaMashu Bantu Township conducts a District Midwifery Service for Bantu.

St. Aidan's Hospital.

Details of available maternity beds for each racial group are shown in the following table. It will be noted that the total number of beds has been increased by 151 since 1965.

Institutions	Maternity Beds				
1. Provincial Hospitals	E	C	B and A	1966 Total	(1965 Total)
Addington Hospital	56	30	-	86	(80)
King Edward VIII Hospital	-	-	318	318	(210)
2. Private Hospitals	E	C	B and A	1966 Total	(1965 Total)
St. Aidan's Hospital	-	-	33	33	(30)
St. Augustine's Hospital	32	-	-	32	(30)
McCord's Zulu Hospital	-	-	66	66	(33)
Mothers' Hospital	46	-	-	46	(46)
Parklands Nursing Home	19	-	-	19	(20)
Totals (1 + 2)	153	30	417	600	(449)

(c) Supervision of Midwives

The private midwives registered with the City Health Department and allowed to practise in the Municipal area are supervised by a European Health Visitor. The equipment of both the certificated and non-certificated European and Coloured midwives is examined every 3 months, and the Asiatic midwives' equipment each month. All notified cases of ophthalmia neonatorum, puerperal sepsis and stillbirths are investigated.

Details of supervision of midwives and confinements attended during the year appear in the following table:-

Details	E	C	B	A	1966 Total	(1965 Total)
Certificated midwives listed	3	2	-	-	5	(6)
Confinements attended	47	26	-	-	73	(86)
Non-certificated midwives listed	-	2	-	65	67	(85)
Confinements attended	-	9	-	899	908	(954)
Midwives appliances examined	7	7	-	615	629	(724)
Midwives dressings sterilised	-	8	-	1202	1210	(1440)
Visits to midwives' patients at home	16	8	-	183	207	(166)
Warnings to midwives for not complying with regulations	-	2	-	2	4	(9)

(d) Total Number of Confinements Conducted in Durban by Midwives only (including Midwives employed by N.P.A.)

Midwives	E	C	B	A	Total 1966	(Total 1965)
Certificated	42	185	640	967	1834	(2837)
Non-certificated	-	9	4	806	819	(1030)
Totals	42	194	644	1773	2653	(3867)

E. EXFOLIATIVE CYTOLOGY

(a) The following table shows the total number of exfoliative cytology examinations of females living in Durban for the early detection of cancer of the female genital tract, since this scheme was first inaugurated by the City Council in September 1962.

Year	Total Examinations	Repeat Examinations	Confirmed Malignant
1963	2,614	34	12
1964	2,915	324	18
1965	3,807	590	25
1966	4,754	611	26
Total	14,090	1,559	81

(b) The following table shows the number of exfoliative cytology examinations undertaken during 1966 according to race and age groups. The figures shown in brackets are the number of examinations repeated because of abnormal or suspect malignant smears. The number of cases of malignancy detected by cytology and confirmed by histological examination appears in the final column.

RATE PER 1000 LIVE BIRTHS

Age Group in Years	Examinations - with repeat examinations in brackets				1966 Total	1966 Confirmed Malignant	1965 Total	1965 Confirmed Malignant
	E	C	B	A				
Under 30	1098 (92)	11 (-)	6 (-)	94 (4)	1209 (96)	1 -	820 (91)	- -
30 - 39	1261 (192)	28 (1)	8 (1)	103 (6)	1400 (200)	3 -	1208 (202)	5 -
40 - 49	1079 (201)	9 (-)	3 (-)	96 (2)	1187 (203)	9 -	977 (177)	9 -
50 - 59	471 (79)	4 (-)	- (-)	25 (1)	500 (80)	7 -	408 (75)	6 -
Over 60	156 (12)	- (-)	2 (-)	3 (-)	161 (12)	4 -	152 (17)	5 -
Not stated	259 (17)	- (-)	1 (-)	37 (3)	297 (20)	2 -	242 (28)	- -
Totals	4324 (593)	52 (1)	20 (1)	358 (16)	4754 (611)	26 -	3807 (590)	25 -

F. CHILD HEALTH

(a) Child Health Clinics

Maternal and child health clinic sessions were held for all races, in halls hired for the purpose, or in the purpose-designed municipal clinics at 37 clinic venues. Several changes in clinic programmes and venues were affected during the year and are detailed below.

(i) Sherwood Clinic (European)

This mother and baby clinic ceased operating in June 1966 due to low attendances and the few mothers who still attended were referred to the Overport or Westridge Clinic with no apparent inconvenience.

(ii) Magazine Barracks Clinic (Asiatic)

The Asiatic community was removed from this area for re-housing in Indian Townships and the clinic was closed in February 1966.

(iii) Asherville Clinic (Asiatic)

This clinic, run entirely by the Asiatic staff, commenced in April 1966, with one full day session weekly and is very well supported.

(iv) Lancers Road Clinic (Asiatic and Bantu)

This Central City Clinic is heavily attended by mothers and babies from all parts of the City and is also the venue for Asiatic antenatal clinics. Alterations to the building with the erection of a covered passage-way connecting the two separate buildings and general reorganisation of the clinic procedures have greatly improved working conditions here.

(v) Clairwood Clinic (Asiatic)

Due to alterations necessitated by the construction of the Southern Freeway the hall hired for this clinic

NEW CHILD HEALTH CLINIC

was evacuated in July 1966 but an alternative temporary venue was found in the vicinity. It is expected that the original hall will be reoccupied early in 1967, with much improved working conditions resulting from alterations.

(vi) Warwick Avenue Clinic (European and Coloured)

A new purpose-designed central clinic for child health and immunisation in Warwick Avenue was opened on 13th December. This clinic replaces the old and dilapidated Gale Street premises which will shortly be demolished.

(vii) Chatsworth Clinic (Unit 10) (Asiatic)

Building operations on this second purpose-designed clinic in the Chatsworth Township commenced during June 1966 and are expected to be completed early in 1967. This clinic will be conducted entirely by Asiatic staff with the Senior Asiatic Health Visitor in charge.

Details of sessions and attendances at all clinics are shown in the following tables:-

European Clinics	Sessions	Attendances
Fynnlands	50	4,464
Wentworth	49	3,118
Montclair	51	4,239
Woodlands	51	2,876
Sea View	46	3,038
Hillary	26	1,193
Bellair	25	869
Westridge	49	1,541
Gale Street	175	12,874
Glenwood	12	443
Overport	50	4,557
Point	46	2,184
Greyville	50	3,351
Morningside	51	4,454
Sherwood (closed June 1966)	20	258
Virginia	49	2,937
Red Hill	24	1,697
Durban North (2 clinics)	50	1,947
Old Fort Place	134	1,684
1966 Totals	1,008	57,724
(1965 Totals)	(1,043)	(57,492)

Coloured Clinics	Sessions	Attendances
Gale Street	103	11,741
Mayville	58	9,295
Sparks Estate	165	18,058
Wentworth Government Village	49	11,188
Austerville	69	14,955
Red Hill	27	4,411
1966 Totals	471	69,648
(1965 Totals)	(448)	(53,503)

Bantu Clinics	Sessions	Attendances
kwaMashu (Rydalvale)	299	76,132
kwaMashu (Goodwin's)	248	52,156
Lamontville	390	33,291
Umlazi Glebe	148	20,201
Chesterville	194	18,855
Cato Manor	52	993
Lancers Road (City)	148	21,250
1966 Totals	1,479	222,878
(1965 Totals)	(1,569)	(228,240)

Asiatic Clinics	Sessions	Attendances
Chatsworth (Unit 2)	238	48,700
Merebank	242	28,652
Clairwood	202	31,243
Mayville	142	26,186
Cato Manor	95	10,525
Clare Estate	51	4,219
Magazine Barracks (Closed February 1966)	30	1,320
Lancers Road	259	57,698
Asherville (from April 1966)	52	7,417
1966 Totals	1,311	215,960
(1965 Totals)	(1,520)	(232,911)

Details showing the total number of clinic sessions and attendances are as follows:-

Details	E	C	B	A	Total 1966	(Total 1965)
Clinic sessions	1,008	471	1,479	1,311	4,269	(4,580)
Clinic attendances	57,724	69,648	222,878	215,960	566,210	(571,146)
New cases	4,431	3,047	18,027	16,093	41,598	(42,392)
Cases seen by doctor	3,642	3,297	4,234	4,269	15,442	(18,467)

(b) Home Visiting

All mothers except those who were confined by their own private doctors were visited at home shortly after discharge from hospital or after termination of the midwives' services. At the request of the Durban Child Welfare Society all protected infants and foster children were visited and reports submitted to the Society. This also applied to certain reports of neglect and malnutrition in pre-school age children. The importance of home visiting cannot be over stressed, especially in the non-European areas, and the following figures illustrate a satisfactory increase in the amount of home visiting undertaken during the year.

Home Visits	E	C	B	A	Total 1966	(Total 1965)
First visit	2,743	4,595	13,821	17,265	38,424	(33,074)
Re-visit	6,189	1,230	3,201	4,750	15,370	(12,422)
Total	8,932	5,825	17,022	22,015	53,794	(45,496)

(c) State Subsidised Skim Milk Powder Scheme

During the year 1966, 152,373 lbs of State subsidised dried skim milk, equivalent to 1,218,984 pints of reconstituted skimmed milk, were distributed at child health clinics for the prevention of kwashiorkor; 94% was sold at 5 cents per pound, the remaining 6% being supplied free to indigent patients.

The total of 318 cases of kwashiorkor notified during the year was less than half the total for the previous year. These cases were investigated by a health visitor who visited the home, established the place of domicile during the month preceding notification, gave advice on correct feeding and arranged for the patient, and any other cases in the same family, to attend the nearest child health clinic to be issued with regular supplies of skim milk powder.

Of 303 notified cases of kwashiorkor which were investigated, 37% proved to be resident within the Durban area for at least one month, 33% were found to be resident outside the Durban area and 30% could not be traced at all because of ficticious, inaccurate or temporary addresses. It has been the experience of this Department that those persons who cannot be traced are usually from outside the Durban area.

Poverty, ignorance and neglect are equally important factors in the development of kwashiorkor, and the distribution of the State subsidised skim milk powder together with the advice and health education given at child health clinics have materially assisted in reducing the incidence of this disease in Durban.

As can be seen from the accompanying graph the largest number of cases was found to occur in the 12 to 17 months age group with very few cases occurring after the age of 3 years.

The following table shows details of kwashiorkor notifications and investigations during the year.

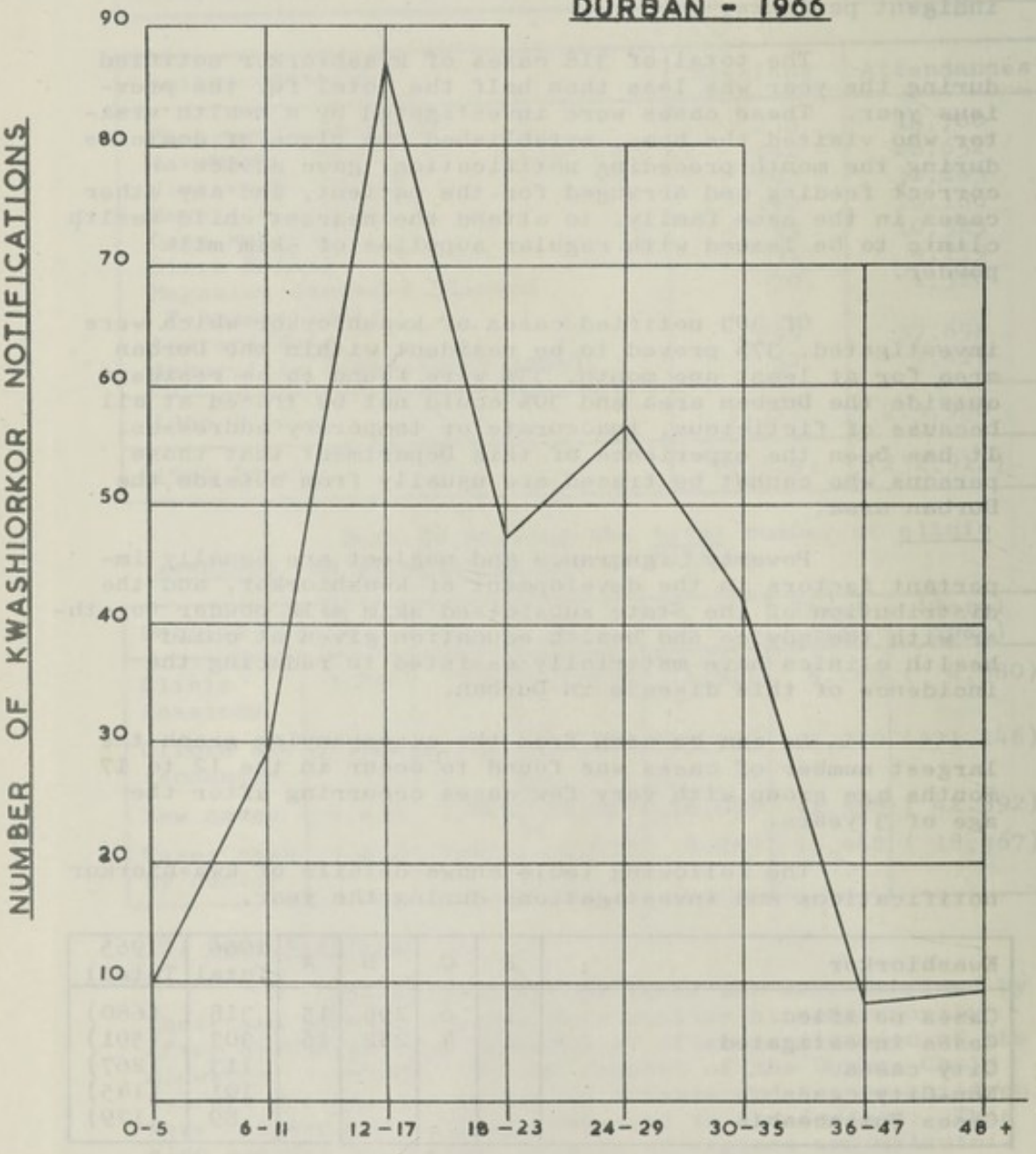
Kwashiorkor	E	C	B	A	1966 Total	(1965 Total)
Cases notified	1	6	296	15	318	(680)
Cases investigated	1	4	282	16	303	(591)
City cases					113	(267)
Non-City cases					101	(145)
Cases Untraceable					89	(179)

The number of deaths due to malnutrition, including kwashiorkor recorded in the under 5 years age group since 1960, is shown in the following table :-

AGE DISTRIBUTION

KWASHIORKOR NOTIFICATIONS

DURBAN - 1966



Year	E	C	B	A	Total
1960	-	1	121	2	124
1961	-	2	109	17	128
1962	-	2	102	8	112
1963	-	2	83	4	89
1964	-	1	78	7	86
1965	-	-	72	3	75
1966	-	1	27	3	31

The total number of deaths from malnutrition, including kwashiorkor is less than half the total for the preceding year.

(d) Nursery Schools, Crêches, Play Centres and Places of Care

Nursery schools and places of care were inspected during the year and conditions were found to be generally satisfactory. Two new European Places of Care were established and registered following inspection. Some unregistered Asiatic play centres are operating in the City and are being investigated and if necessary reports will be submitted to the Department of Indian Affairs.

(e) Lectures and Demonstrations

Lectures and demonstrations on clinc procedure and organisation were given to European and Asiatic Social Science students, B.Sc. Nursing students and a Women's Institute. Several visitors, including the International President of the Nursing Association, who were conducted round the kwaMashu Bantu Township showed great interest in the Child Health Clinics and Bantu places of care.

(f) Addington Hospital Centenary Bursary

The 1965/1966 Addington Hospital Centenary Bursary which is awarded annually by the Durban City Council for Mothercraft training was awarded to Miss Noel Garner who attended the Lady Buxton Home from 1st June 1966 to 30th September 1966. It is pleasing to record that she passed the Certificate in M othercraft, with honours.

(g) Awards to Nursing Students

The following nurses were selected to receive the Durban City Council awards for the most outstanding nurses completing their training in the City hospitals during 1966:-

(i) Addington Hospital

Miss Jennifer Cronwright : Gold Medal
Miss Annabel Dougall : Silver Medal

(ii) Entabeni Hospital

Miss Charlene Ellis : Rolled Gold Fob Watch
Miss Patricia Purser : Stainless Steel Fob Watch

(iii) St. Augustine's Hospital

Miss Marie Morgan : Rolled Gold Fob Watch
Sister Clare : Stainless Steel Fob Watch

(iv) King Edward VIII Hospital

Miss Edith Kumalo	: Rolled Gold Fob Watch
Miss Tozama Nkomo	: Stainless Steel Fob Watch

(v) McCord's Zulu Hospital

Miss Prudence Bekizwa	: Rolled Gold Fob Watch

(vi) St. Aidan's Hospital

Miss Marian Karodia	: Rolled Gold Fob Watch

IX. HEALTH EDUCATION

The importance of health education is recognised throughout the world and has become an essential requirement in public health practice. "Prevention is better than cure" and also much less expensive. To improve individual and community health, requires not only the efforts of the health officials in their every day work, but the full co-operation of the public generally. In effect this means that everyone must play his or her part in practising codes of behaviour conducive to healthy living and personal wellbeing. To achieve this calls for extensive health education programmes at all levels and for all race groups. An awareness of disease and prevention thereof, environmental sanitation, and unhygienic conditions prejudicial to good health need be appreciated by all sections of the population. Medical Officers of Health through the medium of the press and radio have the important task of public relations, through which much can be achieved. Health education is practised by every other health official, the Health Inspectors for example, have continuously before them the importance of enlightening the public with whom they come in contact in regard to varied complaints. Health Visitors conduct mother and baby clinics which are mainly advisory and educational in nature.

However, a health education unit is required to supplement and extend knowledge on the concepts of health promotion in all fields and to all members on a community wide rather than an individual basis. This applies particularly to the non-European groups, amongst whom a great ignorance of health principles prevails, a group beset by superstitions, beliefs and fears, which have not advanced pari passu with modern trends and thinking.

The Durban City Health Department, under the direction of the Medical Officer of Health, has such a unit, with a Health Educator in charge, where Bantu, Asiatic and Coloured lecturers are trained and employed to teach to their own racial groups. The activities of the section are wide and varied; health films, talks, and demonstrations are given to groups such as Women's Institutes, Church Associations, Scouts, apprentices and other specific groups desirous of furthering their knowledge of public health. Films on health topics are also shown at schools. Non-European programmes are carried out daily in the huge housing schemes, at hostels, schools, eating houses, beerhalls, locations, at places of work and in factories and even to groups in the streets, the method of imparting knowledge varying in accordance with the circumstances. Films are shown, where the audience is able to appreciate the message, and suitable facilities are available. Film slides and models are used for demonstration purposes, broadcast vans for groups in outdoor venues, and house to house visiting for special and more personal health problems. Subjects covered by these methods include amongst a host of others, Bilharzia, Tuberculosis, Infectious Diseases, Food Hygiene and Malnutrition; rodent and insect pest control and environmental and personal hygiene. Assistance is also given to the immunisation programmes by loudspeaker van announcements, regarding the venue, time, symptoms of the disease and the preventive measures offered. A successful campaign is essential when diseases such as Poliomyelitis, Diphtheria and Rabies are concerned.

The unit is also able to co-operate with other local bodies such as the South African National Tuberculosis Association, the South African National Council for Alcoholism and others in spreading propaganda during any specific health

week or campaign.

To achieve maximum results in all ventures, however, the lecturer must be of the same race group and be aware of the prevailing beliefs and superstitutions of his listeners as well as topical events. A fellow lecturer placed in the audience or crowd, to mingle, watch and listen, can glean much from remarks passed and the listeners' reactions noted. Promoting an audience discussion group following a film show or lecture has much the same effect. Illustrative of the information obtained by these methods the following two examples are worth mentioning. A Bantu tuberculosis case firmly believed that he had eaten some poisoned meat or food which had lodged in his lung and that no European pills or injections could dislodge this but only a medicine to induce vomiting, obtainable from the witch doctor could cure his troubles; a Bantu suffering from food poisoning believed that she was not sick because of anything she had eaten, but had been bewitched by an enemy and could only be cured by her own medicine man.

The activities of the Departmental Health Education Section, amongst the different race groups, is summarised below:

1. WHITE COMMUNITY

Health education programmes made up of 16 m.m. sound films followed by lecture/demonstrations on a variety of health topics were held at European schools in the City area and in the Departmental purpose-designed auditorium.

A. European Schools

European schools in the Durban area and the Teachers Training College were visited by members of the Health Education Section with portable 16 m.m. film sound projection and audio-visual demonstration equipment to conduct programmes and lectures on the following subjects:

Subject	Sessions
Smoking and lung cancer	11
Tuberculosis	2
Bilharzia	6
Mental Health	2
Mosquito control	2
Nutrition	11
Food handling hygiene	9
Total sessions	43

B. Departmental Auditorium

(i) Women's Groups

Church groups and women's institutes attended programmes devoted to the following subjects:

Subject	Sessions
Mental Health	6
Marriage Guidance	8
Tuberculosis	2
Lung cancer and smoking	6
Nutrition	6
Food Handling Hygiene	4
Family Planning	2
Food Poisoning	6
Alcoholism	4
Pest Control	6
Total sessions	50

(ii) Apprentices

Programmes embracing the subjects of Alcoholism, Bilharzia, Road Safety, Smoking and Lung Cancer, Venereal Diseases, and Tuberculosis were held for 3 groups of apprentices with a total attendance of 326.

(iii) In-service Training : Departmental Staff

In addition to the course of lectures and practical demonstrations, two film sessions were held for health inspectors attending a course leading to the National Diploma in Tropical Hygiene. The subjects covered included The Microscope, Tropical Diseases, Pest Control, and Sanitation.

(iv) Other Miscellaneous Groups

(a) State Health Department

Two groups of officials were given practical demonstrations of equipment and techniques of health education undertaken by the Section in the field in support of immunisation campaigns, followed by films on health topics screened in the Auditorium.

(b) Natal Provincial Administration

Doctors and nurses undertaking medical inspection of schools in Natal attended a programme including films on health subjects followed by a talk on all aspects of immunisation of children as undertaken by the Department.

(c) National Development and Management Foundation

Industrial nurses, compound and works managers from local factories attended a seminar on "Tuberculosis and Its Effects on the Worker". The programme included films on this disease followed by talks by two medical officers on the staff of the Department.

(d) Non-licensed Hoteliers' Association

Food Handling Hygiene, Food Poisoning and Pest Control were the subjects of films followed by lecture/demonstrations given to a group of hotel owners and hotel managers belonging to the Association.

2. COLOURED COMMUNITY

A. Coloured Schools

Bilharzia was the subject of 16 m.m. sound films shown at 15 sessions to 1,954 pupils at Coloured schools.

B. Factories

Coloured workers employed in factories were shown films on Nutrition at 19 sessions, while films and talks on Family Planning were given at 30 sessions.

C. Coloured Residential Areas

At Austerville, films on Family Planning were shown on four occasions, 478 persons attending. The following talks and lectures were given to householders in the Greenwood Park, Mayville, Sydenham and Sparks Estate areas:

Subject	Talks
Immunisation	2,670
Rabies	1,350
Nutrition	490
Venereal Disease	20
Tuberculosis	447
Family Planning	47
Total Talks	5,024

3. ASIATIC COMMUNITY

A. Asiatic Schools

At 36 sessions films, followed by lecture/demonstrations were given at schools and dealt with Bilharzia, Tuberculosis, Smoking and Lung Cancer, Alcoholism, and Food Poisoning.

B. Factories

Films and lecture demonstrations were given on Food Handling Hygiene to employees at food processing factories as well as lectures on Tuberculosis.

C. Asiatic Residential Areas

Talks were given on a variety of health topics in the Central, Sydenham, Mayville, Greenwood Park, Chatsworth, Merebank, Umhlatuzana and Kharwastan areas as shown:

Subject	Talks
Immunisation	7,015
Food Handling Hygiene	78
Venereal Disease	64
Bilharzia	290
Tuberculosis	706
Nutrition	61
Family Planning	9,842
Rabies	1,323
Total Talks	19,379

4. BANTU COMMUNITY

A. Bantu Schools

Film shows followed by lectures and discussions were given at 114 sessions held at schools, the themes being Tuberculosis, Food Poisoning and Food Handling Hygiene.

B. Radio Bantu

Radio scripts were prepared and recorded by members of the Section for broadcast over Radio Bantu. The subjects included talks on Smallpox, Poliomyelitis, Immunisation and Nutrition.

C. Bantu Townships

Lecture/demonstrations on health subjects were given at kwaMashu, Lamont Location, Umlazi Glebe Location and at beer halls, hostels, compounds and at servants' quarters

and kitchens of hotels in the City area. The topics dealt with are listed as follows:

Subject	Talks
Poliomyelitis	14,996
Smallpox	1,290
Family Planning	3,525
Nutrition	2,139
Tuberculosis	5,473
Venereal Disease	2,295
Food Handling Hygiene	132
Kwashiorkor	318
Gastro-enteritis	219
Total talks	30,387

D. General

(i) Bantu Domestic Servants

In Durban North 4 film shows followed by lectures and discussions were given to domestic servants on the subjects of Tuberculosis, Nutrition, Bilharzia and Venereal Disease.

(ii) Municipal Abattoir Bantu Staff

Lecture demonstrations were given to the staff on Personal Hygiene, Food Handling Hygiene and the dangers to health of unsound meat.

(iii) Poliomyelitis Immunisation

Lecturers materially assisted in the campaign for immunisation against Poliomyelitis conducted in the Bantu areas throughout the year.

X. HEALTH INSPECTION

STAFF

Mention was made in my 1964 report of the time which was fast approaching for a review of the divisions, districts and duties of the Health Inspectorate. In 1965 the establishment was increased by the addition of a position of Senior Health Inspector (Food Hygiene) and two posts of Health Inspector (Slums and Housing). During the year under review opportunity was taken to re-examine the environmental sanitation branch in the light of changed circumstances in the various districts and the further development of non-European townships. The Inspectorate is now organised on the following basis:

Function	Senior Health Inspector	Health Inspector	Non-European Health Inspector
Environmental Sanitation	6	34	4
Housing/Slums/Building Control	1	3	-
Food Hygiene	1	-	-
Dairies	1	3	-
Field Hygiene	1	-	-
Epidemiology	1	1	-
	11	41	4

COMPLAINTS

A total of 3,847 complaints were lodged with the Department and fall into the following categories :

Animal keeping	3	Offensive smells	234
Bugs	39	Poultry keeping	67
Cockroaches	75	Refuse: Dumping	151
Drainage: Appurtenances	72	Removals	13
Defects	344	Rodents	370
Fleas	10	Sanitary accommodation	43
Flies	244	Shacks (illegal)	2
Food: Unsound	29	Smoke/air pollution	2
Unhygienic handling	28	Structural defects	101
Housing: Illegal	19	Uncleanliness of premises	586
Overcrowding	38	Vacant land	541
Miscellaneous	105	Ventilation/lighting	6
Mosquitoes	725		

These complaints were investigated expeditiously and appropriate action was taken. Comment on certain of these incidences is made elsewhere in these chapters.

INSPECTIONS

A summary of visits made by all health inspectors and allied personnel is as follows:

Food-handling Premises		Other Premises	
Bakeries	481	Barracks, compounds	552
Boarding houses	2,035	Dwellings	29,314
Butcheries	4,177	General dealers	5,930
Food manufactories	1,207	Hairdressers	840
General/fresh produce dealers	20,399	Laundries/dry-cleaners	750
Hotels	1,606	Lodging houses (flats etc.)	14,370
Dairies and Depots	3,158		
Offensive Trades	105		

Food-handling Premises		Other Premises	
Milk Bars	151	Offensive trades	698
Restaurants/Eating Houses	6,561	Sundry: Trading	14,589
Tearooms	2,141	Non-trading	48,737
Sundry	2,706		

Total number of inspections - 160,507

Arising from these inspections the following action was taken -

Personal notices issued at time of inspection	9,035
Written notices	3,240
Letters	1,600
Prosecutions (counts)	184

LICENSING

(a) Trade Licence Applications

All applications received by the licensing authority are referred for report on the public health circumstances. During 1966 the number of new applications received and considered totalled 2,940.

(b) Licensing Ordinance

In terms of the Licences (Control) and Municipal Licences Ordinance (Natal) only inspectors of licences and the medical officer of health of a borough may report on behalf of the local authority on any application to the licensing authority, or be called as a witness at a hearing for the purpose of elaboration or cross-examination as to such report. Difficulty has arisen in that requests were made for the departmental head to appear personally despite the fact that he did not inspect the premises or actually sign the reports thereon. The problem is being overcome by the City Council recommending an amendment to the Ordinance to provide for inspections of premises to be carried out by health inspectors or any other officer authorised by the City Medical Officer of Health. This proposal has been endorsed by the Natal Municipal Association and is awaiting promulgation by the Administrator.

(c) Bantu Housing

The Director of Bantu Administration referred 23 applications for permission to house Bantu non-domestics in terms of the Regulations under the Bantu Urban Areas Consolidation Act for consideration in regard to the public health implications. The number of applications received in recent years has fallen very considerably due to the restrictions on the housing of non-domestic servants in European residential areas following the provision of adequate improved accommodation in the Bantu townships.

ANIMAL KEEPING

In terms of the Public Health By-laws 30 annual renewals and 8 new applications were received. Authority was granted in respect of the following animals for 1966:

Bovines	16	Horses	997
Dogs kept for gain	295	Sheep	4
Goats	8		

It is anticipated that the number of horses kept in Durban will be reduced considerably as soon as the new racing stables of the Durban Turf Club are completed and occupied at Summerveld, Shongweni.

MATTRESS-MAKERS

In terms of the Regulations regarding Mattress-Makers and Upholsterers 32 permits were issued of which 26 were annual renewals.

OFFENSIVE TRADES

The City Medical Officer of Health granted initial permits to conduct the following trades:

Metallurgical Works
Cement Works (concrete products)
Storage of Hides and Skins
Processing the Products of
Petroleum Refining (2)

During the year an approach was made to the City Council to sell 40 acres of land at Merebank for the establishment of a pulp and paper mill in which use would be made of sewage effluent. This understandably gave rise to a number of public health reservations but the Department was prepared to consider the proposal when the applicant company decided to adopt the comparatively new magnesium soluble base bi-sulphite (magnefite) pulping process with the necessary recovery plants, and were prepared to accept sewage treated by the local authority. Aware of the nuisances which usually arise from the "kraft" or sulphate operation, overseas authorities were consulted particularly in those parts where the magnefite process was known to be in use, and opinions were obtained. Ultimately the applicants chose to establish the pulping process, using the sulphate method, as a "border" industry some 75 miles directly West of Durban, and to confine the local undertaking to paper milling and bleaching using adequately treated sewage. To date the Department has not been called upon to consider the matter in detail in terms of the Offensive Trade Regulations of the City of Durban as particulars of the plant to be installed and its operation have still to be planned by the Company's technical advisers, whilst the sale of land remains to be finalised.

ENVIRONMENTAL SANITATION

(a) Sewer Surcharges

A result of the overloaded capacity of Durban's sewerage system, which will not be relieved until the major works presently under construction are brought into use, is the inevitability of surcharging which takes place from time to time. In this regard a number of reports were received and taken up with the City Engineer's Department. That Department was faced with a serious problem when the main sewer fractured in the Victoria Embankment area and it was necessary to divert large volumes of sewage into the storm water drainage system, thus giving rise to complaints from residents in the neighbourhood. Remedial works of some magnitude were necessary and the nuisance finally was abated. Deodorising measures were also undertaken.

(b) Public Water Supply

On a number of occasions the Department received

reports from residents of an odour emanating from fresh water taps in private premises which, on investigation, was found to be due to residual chlorine. It was pointed out that (i) with a diminution of supplies in the dry winter months the amount of chlorine can become detectable; (ii) it was inadvisable, particularly when active construction works were in progress with the possibility of contamination, to reduce the chlorination dosage; and (iii) the presence of residual chlorine in the water was not a health danger and was in fact necessary for the consumers' protection.

(c) Stagnant Water Nuisance

Work in progress on the construction of the new Southern Freeway gave rise to a stormwater drainage problem by the disruption of established means of disposal and ponding in depressions took place. In fact premises contiguous to the working areas were inundated after rainfalls. The nuisance was abated only by the adoption of regular pumping to empty the depressions pending reinstatement of the drainage system.

(d) Unauthorised Refuse Tipping

A land owner allowed a low-lying site to be used for the dumping of builders' rubble but various persons deposited other types of putrefactive refuse thereby causing offensive conditions and fly development. Departmental efforts to halt the practice met with little success and recourse to prosecution became the only possible remedy. The Court took a serious view of the contravention of the By-law and imposed a salutory sentence, partly suspended, with a view to discouraging illegal dumping.

(e) Miscellaneous Nuisances

A number of problems arose and were corrected by departmental action, and these included a dust nuisance from a bulk concrete cartage depot; insanitary conditions in a private dwelling where "obstruction" by the occupier was only resolved by an order of Court; and offensive smells and fly breeding in a beach hotel which were traced to a defective soil pipe in the sub-floor area only after portion of the flooring had been removed.

(f) Non-European Townships

The Department has been unable to recruit qualified personnel of the racial group concerned, only one position of Indian Health Inspector being filled out of an establishment of two for Chatsworth Township, and the two positions for Bantu Health Inspectors in respect of kwaMashu remained vacant. Despite these difficulties inspectorial programmes have been well maintained by the European staff. Public health circumstances were generally satisfactory, but problems of note encountered in these townships are summarised as follows:

Chatsworth Indian Township

(i) Portion of the farm Welbedagt was incorporated into the City for extension of the township and it was found that the population involved in this transfer of responsibility approximated 1000 persons. There were some 100 dwellings and shacks, trading premises did not meet public health standards, water supplies comprised a borehole and rainwater tanks, and sanitation was in the form of pit privies. The City Engineer was promptly requested to inaugurate a safe water supply and night soil and refuse

removal services.

(ii) The Department took prompt action to bring to an end the illegal sale of raw milk from an unauthorised dairy.

(iii) During the extensive building operations involved in the further development of the township it was found that many contractors failed to provide sanitation for construction workers. Steps were taken against the offenders.

kwaMashu

(i) A survey disclosed that 66% of the dwellings inspected showed evidence of bed bug infestation, it being found that a few occupiers had made an effort at control measures but the remainder pleaded poverty or were indifferent. It has been suggested to the Director of Bantu Administration that his Department should bear the cost of eradication by this Department.

(ii) Anti-fly measures were intensified, particularly surrounding refuse receptacles at trading centres, and arrangements were made for additional public receptacles to relieve the indiscriminate littering of streets.

FOOD HYGIENE

(a) Food Inspection

Perishable foodstuffs offered for sale at the City Markets were examined, of which considerable quantities were condemned. These included a large variety of fruit and vegetables (1,597½ pockets, 1,010 bags, 209 boxes and 750 trays), dressed poultry (423 lots), beef and fish (1,291 lbs) and 91 packets of chicken heads, giblets and feet.

In terms of the Local Government Ordinance, and from July under the powers contained in the Regulations relating to Food Inspection framed under the Public Health Act, large quantities of food were inspected arising from seizure by the Health Inspectorate or voluntary surrender by the owners and condemned as unfit for human consumption where necessary and destroyed. Details are as follows:

22,025 tins	: Anchovies and pastes; fish; jams and jellies; canned meat; milk products; soups and sauces; vegetables; and salads.
334 jars	: Anchovies and pastes; fish; fruit; jams; and sauces.
3,340 packets	: Biscuits; food mixes; fruit; sweets; and vegetables.
814 cases	: Fish; fruit; milk products; sweets; and vegetables.
4,662 lbs	: Coffee beans; fish; fruit; meat; sweets; and vegetables.
10 portions	: Milk products.
3,723½ items of	: Bread; ducks; fowls; meat products; pastes; sheep heads and sweets.

(b) Food Sampling

In accordance with the routine procedure under the Food, Drugs and Disinfectants Act, 977 samples of food were submitted for analysis by the State Chemical Laboratories, Pretoria, or the City's analyst in Durban. Of the wide range of commodities selected for attention the following were the major items:

Boerewors	76	Honey	36
Chutney	13	Ice-cream	71
Coffee/chicory	21	Milk	171
Cooking fats/oils	47	Minced meat	179
Cream	37	Sauces	24
Dripping	12	Sausages	94
Ghee	12	Squashes	12

Of all the samples analysed 24 proved unsatisfactory viz:

Boerewors	3	Minced meat	5
Cinnamon	1	Sausages	6
Cochineal	1	Squashes	7
Mayonnaise	1		

The institution of prosecutions resulted in the recovery of R335 in fines.

Apart from the food analyses, 48 samples of water taken from the public supplies were submitted for chemical examination.

(c) Amendments to Food, Drugs and Disinfectants Regulations

During the year the Minister of Health published his intention to amend the Regulations framed under the Act in respect of a number of commodities, and invited criticism of the proposals. The main items concerned colouring substances; ice-cream and sherbet; curry and chilli powders; meat and fish; buttermilk and cultured milk; marine food; and coconut; and the Department's views, which were adopted by the City Council in every case, are summarised as follows:

Colouring Substances

The proposal in this case was to delete from the list of approved colours certain red, orange, yellow, green and blue shades. There was no criticism from the public health viewpoint but difficulty was foreseen regarding Orange SS soluble oil dye which laboratory examination had confirmed to be in regular use by local manufacturers of curry powders. The Minister's attention was drawn to this practice but the Secretary for Health in reply pointed out that the intention to disallow Orange SS was taken on the advice of the World Health Organisation. Manufacturers have appealed to the State Health Department to overlook its use until current stocks of this colouring substance are expended.

Curry and Chilli Powders

This proposed amendment concerned a review of the acceptable standard for curry powder and the adoption of defined standards for chilli powders and "Madras Masala" (Indian red curry powder). The Regulations had hitherto permitted the addition to curry powders of harmless flavouring substances, apart from turmeric with various spices, but the new provision envisaged the addition of spices only for flavouring purposes. There was no objection to the intention per se but attention was again drawn to the local practice of adding the synthetic colouring substance.

Ice Cream and Sherbet

The intention was to improve the bacteriological standard but it was considered that the minimum suggested

should be raised to provide that faecal B. coli shall be absent in 1 millilitre. Furthermore, it was felt that the definition of sherbet warranted review as although it was presumably the object to control all preparations resembling ice cream which did not reach the chemical standard therefor, the existing Regulation did not cover a soft ice cream, as this product is only partly frozen so as to preserve the necessary degree of fluidity when dispensed by machine. Thus, because it was not "frozen", it escaped control under these Regulations.

Buttermilk and Cultured Milk

Here again there was no objection in principle but the existing regulation 8(12), defined cultured milk as being formed by streptococcus lactis or cultured by the addition of various strains of bacillus acidophilus, whereas the proposal envisaged the addition of "desirable micro-organisms". It was considered that this provision could be subject to various interpretations and therefore reference to "suitable" micro-organisms would be preferable.

Marine Food

The proposal herein was to control uncooked and precooked marine food such as prawns, shrimps, crayfish, lobsters, crabmeat, oysters, mussels, clams or fish by laying down bacteriological and other standards of fitness. It is probable that this proposal stemmed from certain difficulties encountered by this Department in its dealings with imported frozen prawns some time ago when it was found necessary to condemn under local legislation, fairly large quantities due to the presence of coagulase positive staphylococcus aureus organisms. The owners were aggrieved by this step and threatened litigation for damages but the matter was dropped when it was realised that the action had been taken after consultation and with the concurrence of the Regional Director, State Health Services, and that the local agents and a purchaser of part of the consignment had signed authorities of surrender. In response to the request from the Secretary for Health for motivated criticisms therefor the City Council strongly recommended the early adoption of the proposed amendment to the Regulations in view of the difficulties already experienced locally in the control of these foods.

Coconut

The Minister also proposed a definition and bacteriological standards of fitness of desiccated coconut and in this case also called for motivated criticisms of the intended amendment to the Regulations. This again was probably the result of local difficulty in controlling importations. Last year laboratory examination disclosed evidence of various contaminants including "coagulase positive strain of staphylococcus", "a growth of staphylococcus pyogenes and salmonella sub-group B" and "staphylococcus albus" which led to the condemnation of four large cases of this commodity. This Department had been particularly concerned due to the local practice of serving desiccated coconut with curries and on sweetmeats, and the City Council resolved to support the proposal in the same manner as the marine food.

(d) Vehicle and Machine Vending

During 1966 the number of vehicles registered in terms of the Food By-laws for the special purpose of selling soft ice cream from dispensing machines totalled 4, and 47 vehicles or carts were registered for the first time for the hawking of a variety of fruit, vegetables and non-perishable foodstuffs. A number of applications for authority to hawk highly perishable articles were refused.

With regard to automatic vending machines, new and renewal applications were received and considered from the public health viewpoint, and registration under the Food By-laws was granted in respect of 73 machines, as follows :

Hot drinks	31	Cold drinks	38
Hot food	1	Cold food	1
Sandwiches	2		

During the year a certificate of registration respecting a hot food automat was revoked due to mechanical malfunctioning, and an application for the installation of a machine was refused on the grounds of siting (exposure to the elements).

(e) Indian Market

The colourful, and perhaps famous Indian Market in Victoria Street provides an irresistable attraction to tourists as a centre of the curio trade and offers a large variety of wares to local residents of all racial groups. From the standpoint of public health, however, a different picture is presented.

The Indian Market was erected at the turn of the century and since that time progressively deteriorating conditions have made it necessary for the City Medical Officer of Health on several occasions in the post-war years to draw attention to unsatisfactory features in these Municipal premises. As long ago as 4th February 1944 the City Council recorded its agreement in principle to the erection of a new market.

Generally, conditions in the Indian Market were most unsatisfactory in regard to all trading facilities. The structure itself is not in keeping with modern building requirements and the type of construction, layout, drainage, inadequacy of employee sanitation etc. do not permit of a reasonable standard of hygiene. Constant efforts are necessary on the part of the staff of the City Market and Health Departments to maintain even a minimum level of cleanliness and control of pests. As regards the handling of food, the market and stalls therein failed to comply with the requirements of the Food By-laws.

In the circumstances it was decided that the time had arrived when positive action should be taken in the interests of public health. The Department took the step of lodging objection to the renewal of trading licences respecting 43 stalls which engaged in food trading, and the City Council on 13th December 1965 therefore instructed the Director of Markets to serve notice for the vacation of these stalls not later than 31st March 1966. The Council furthermore resolved to terminate the tenancy of the remaining stalls by 31st December 1967, and not to permit the transfer of any tenancies or changes of ownership of stalls except in the case of deceased estates.

Following the objection to renewal of licences the following trades were eliminated:

Restaurants	9	Converted to general dealer
General dealer (chilli bites)	1	restricted against the preparation of perishable food.
Offal dealer	1	
Poultry (live)	9	Converted to sale of dressed poultry
Bread and mineral waters etc.	23	Restricted to exclude perishable food and ensure protection from contamination

This paved the way for the adoption of certain palliative measures which included a reorganisation of the layout of stalls; an increase in the size of certain stalls; the renovation and improvement of stalls, furniture and equipment; and minor drainage work. The result was that dressed poultry stalls were modernised; fish and offal stalls were enlarged, rebuilt and provided with proper equipment including refrigeration; butcher shops were required to conform to at least some standard and many other stalls handling foodstuffs were affected in a general hygienic improvement in the public interest. In these circumstances and in the knowledge that (i) all tenancies would definitely be terminated not later than 31st December 1967, (ii) there would be a prohibition on the transfer of tenancies in the interim, and (iii) traders had accepted restrictions where necessary, the Department waived objection to the renewal of licences for 1966, and the City Council extended the notices of termination of tenancies to 31st December 1967.

(f) Food Premises

The Department maintained its practice of programming an annual survey of every food handling establishment, apart from other inspections arising from complaints, trading licence applications or routine matters. Particular attention was again paid to short-term fairs, exhibitions, sporting fixtures and other large public gatherings which were organised for and so well patronised by visitors during the holiday season but which created food hygiene problems. Inspections of catering establishments at night, in the early morning and outside normal "office" hours continued periodically throughout the year.

(g) Food Poisoning

In 1966 there were four episodes worthy of comment, the first occurring in March when a large number of hotel residents were affected following the evening meal. Whilst the offending food was identified, the actual mode of contamination could not be firmly established but it appeared more than likely that a member of the kitchen staff was unwittingly responsible. In September eight employees of a beach restaurant, who fell ill after consuming a meal of chicken curry, recovered rapidly. The following month seven members of a family succumbed after eating a cake purchased from a local confectionery shop. Following bacteriological examination of the uneaten portion it was established that the infecting agent was coagulast positive staphylococci in the cream filling.

Seven Bantu cases of poisoning were reported by the local general hospital in November and the source of infection was traced to chicken bones and scraps pilfered from the refuse receptacles of a food factory by an illegal vendor who was operating in a large industrial area. Departmental action was taken to ensure the discontinuance of this source of scavenging and the police and licensing authorities were reminded of the dangers of illicit peddling.

(h) Food Nuisances

Several instances of contamination of food by foreign substances were reported. Following a complaint of tainted meat purchased from a butcher, investigation revealed the storage of meat under refrigeration in juxtaposition to citrus preserved with depheryl impregnated wrappings. The grapefruit was removed and the cold storage section deodorised.

An occasion arose when bread was contaminated by baking machine lubricant, a razor blade was found in a bottle of chutney manufactured by an extra-City producer, and a pie served in an otherwise well-run restaurant was found to contain a blood-stained adhesive bandage which had become detached from the cook's hand. The cause of the latter trouble, a cut finger, led to temporary suspension from food handling, but legal proceedings could not be taken as the purchaser declined to lodge the necessary affidavit.

(i) Food Research

Very material advantages have accrued from the creation of a position of Senior Health Inspector (Food Hygiene) not only from the viewpoint of co-ordination of inspectorial programmes with uniformity of requirement standards as the keynote, but also having available at the Department's disposal an official who can concentrate on modern food manufacturing and marketing problems, unencumbered by routine. An example of a subject which had given cause for concern was the deterioration of prepacked cooked meats in Durban's subtropical humid climate. Complaints were being received from housewives of tainting, discolouration, sliminess, smell and so on and laboratory examination confirmed that the problem was due not to the quality of the plastic wrappings as originally suspected, but to bacterial multiplication after preparation but prior to sealing. Despite the adoption of normal hygiene precautions at manufactories contamination was occurring through various agencies within the food departments and spoilage was being assisted by delivery delays in uninsulated vehicles or containers.

These findings led to an intensified search throughout food factories for deficiencies in supervision, sterilisation procedures and all other steps in the production chain. Research into these aspects was greatly assisted by the application of the "agar sausage" sampling technique where, with laboratory co-operation, it was possible from examination results to pin-point any hygiene weaknesses.

Whilst development of this sampling aid is still in the experimental stage, preliminary assessment of its adaptability shows clearly its potentialities as a very valuable weapon in the food hygienist's armamentarium.

BUILDING CONTROL

All plans of new buildings or conversions, which require the local authority's approval before any structural work may be undertaken, are referred by the City Engineer to this Department whose role in scrutinising all planned projects is not only to ensure compliance with its own legal codes but to require conformity with modern public and promotive health concepts. The Plans Inspectorate, during 1966, viewed 4,287 plans representing projects to the estimated value of R35 million of which 3,115 plans related to residential accommodation, referred to in greater detail in Report "B", the remainder being categorised as follows:

Type of Structure	No. of Plans	Estimate of Costs
New Industrial and Commercial Buildings	95	R6,943,210
New State and Municipal Buildings	17	R463,500
Other new buildings	19	R368,150
Additions to non-residental buildings	1,010	R9,442,312
Additions to State and Municipal buildings	31	R353,950
Total	1,172	R17,571,122

In many instances discussions were held with owners or architects and written reports were issued to the interested parties enclosing, where applicable, copies of codes of practice which outline departmental requirements and objectives. This section of the Department also deals with problems relating to unorthodox methods of construction or major developments in liaison with sister departments, as the following examples illustrate:

(a) Shopping Arcades

During the year the Department collaborated with the City Engineer and others regarding the proposed replanning of the central City area bounded by West, Gardiner, Smith and Field Streets to permit, in addition to existing arcades running from West Street to Smith Street, what might be termed a pedestrian way, piazza or transverse arcade to allow the creation of shops and frontages at the rear of buildings in West and Smith Streets which, for a number of reasons could not be authorised unless the Building By-laws were amended in several respects. This Department approved the scheme conditional upon the incorporation of public health requirements and safeguards.

(b) Window-less Offices

Following upon representations made to relax the required standard for natural lighting and ventilation in respect of special use accommodation such as operating theatres, electrical research laboratories, broadcasting recording studios, computer rooms and the like, agreement was reached regarding minimum public health standards. The Building By-laws were accordingly amended to provide that where it is established to the satisfaction of the City Engineer that the inclusion of windows in any part of a building in conformity with the By-laws would adversely affect the functional use or operation of any equipment therein he may authorise the construction of such parts of the building without windows or with a lesser amount of window area than is otherwise required. He may now likewise relax natural standards of lighting and ventilation to permit the compartmentation to ceiling height of business premises or shops subject to the conditions that (i) no area less than 1000 sq. ft. may be partitioned, (ii) not more than 10% of such area may be partitioned, and (iii) no partitioned area may be occupied separately from the remaining area.

These relaxations are conditional in every case on compliance with the By-law standards for mechanical lighting and ventilation and the proper use of such equipment.

(c) Unconventional Buildings

Arising from requests made by the State, the

Administrator of Natal and the business sector to allow the erection of timber dwellings consideration was given as to what relaxation, if any, of the standards entrenched in the Building By-laws could be permitted and what safeguards would have to be imposed to secure conformity with engineering and public health demands. The national standards for industrialised building techniques and materials were examined in the light of local conditions, and buildings already erected inspected in situ. As a result a policy was formulated regarding the circumstances under which unconventional dwellings could be permitted, thus following an earlier decision of the City Council to allow the erection of "omodular" and similar type structures, which if adopted will open the way to development on unorthodox lines. However, the conditions to be met will inevitably be stringent in order to preserve minimum standards which have been developed over the years from experience of conditions in a number of respects peculiar to this region and climate.

PROSECUTIONS

Code Contravened	Admitted Guilt	Found Guilty	Fine Paid	Remarks
PUBLIC HEALTH BY-LAWS			R	
Unclean conditions	20	1	329.00	R15.00 or 30 days
Structural defects	18	4	334.00	1 case : R20.00 or 20 days 1 case : R15.00 or 30 days 1 case : R15.00 or 8 days 1 case : R5.00 or 5 days
Drainage defects	8	5	111.00	1 case : R10.00 or 20 days 2 cases : R5.00 or 5 days 1 case : R30.00 or 30 days (Suspended for 30 days) 1 case : R15.00 or 15 days (Suspended for 12 months)
Failure to provide drainage system	4	1	55.00	R5.00 or 5 days
Defective sanitary fitments	6	1	61.00	R15.00 or 15 days (Suspended for 12 months)
Failure to repaint premises	4	1	55.00	R5.00 or 5 days
Failure to provide refuse receptacles	2	1	40.00	R10.00 or 20 days
Unclean/uncovered refuse receptacles	1		15.00	
Conveyance of offensive matter on open vehicle	1		15.00	
Depositing refuse in public roadway	1		15.00	
Failure to keep privy in good repair	1		5.00	
Keeping an animal without a permit		1	-	Cautioned and discharged
Keeping poultry in an unapproved structure	1		5.00	
Permitting mosquito development	1		15.00	
Permitting fly development	4	1	55.00	R50.00 or 10 days (Suspended for 2 years)

Code Contravened	Admitted Guilt	Found Guilty	Fine Paid	Remarks
FOOD BY-LAWS			R	
Unclean conditions	32	4	589.00	1 case : R30.00 or 30 days 1 case : R20.00 or 10 days 1 case : R15.00 or 15 days 1 case : R4.00 or 4 days 1 case : Not guilty
Exposure of food to contamination	23	6	550.00	1 case : R50.00 or 50 days 1 case : R50.00 or 10 days 1 case : R30.00 or 30 days 1 case : R20.00 or 10 days 1 case : R15.00 or 15 days 1 case : R20.00 or 10 days (Suspended for 1 year)
Dirty Utensils	6		65.00	
Defective refrigeration	2		10.00	
Failure to provide sinks	1		15.00	
Failure to provide hot water	2		25.00	
Failure to provide refrigeration for perishable food	1		10.00	
Failure to keep milk under refrigeration		2	18.00	1 case : R15.00 or 15 days 1 case : R3.00 or 3 days
Keeping incompatible articles in a food room	4		40.00	
Keeping personal clothing in a food room	2	1	40.00	1 case : R15.00 or 15 days 1 case : Not guilty
Failure to provide protective clothing for food handlers	5	1	75.00	1 case : R30.00 or 30 days 1 case : Not guilty
Failure to provide soap and towels for food handlers	1		5.00	

Code Contravened	Admitted Guilt	Found Guilty	Fine Paid	Remarks
FOOD BY-LAWS (Contd.)			R	
Using food room as a sleeping apartment	1		8.00	
Failure to provide apparatus for handling food	2	1	40.00	R15.00 or 15 days
Failure to provide wash-hand basin	1		15.00	
Failure to paint interior of premises	1		15.00	
Manufacturing food in unapproved premises	3		45.00	
Sale of food from unapproved premises	1		15.00	
Sale of unsound food	1		20.00	
Keeping live poultry in yard of food premises		1	3.00	R3.00 or 3 days
Structural defects	2		35.00	
Unclean/defective food delivery vehicle	4		60.00	
Conveyance of food in unapproved vehicle	2		35.00	
MILK (AND MILK PRODUCTS) BY-LAWS				
Illegal introduction of raw cream into the City	1		10.00	
Illegal introduction of ice cream into the City			-	Not guilty
Sale of cream not conforming to chemical standards	2		30.00	
BUILDING BY-LAWS				
Failure to provide sanitary accommodation for building workers	3		40.00	
Utilising unapproved premises for human habitation	1		10.00	

Code Contravened	Admitted Guilt	Found Guilty	Fine Paid	Remarks
GENERAL BY-LAWS			R	
Storage of offensive material on public footpath	1		15.00	
SLUMS ACT				
Failure to demolish a slum	3		45.00	
PUBLIC HEALTH ACT				
Sale of unsound food			-	Not guilty
Exposure of food to contamination	4		90.00	
FOOD, DRUGS AND DISINFECTANTS REGULATIONS				
Sale of minced meat containing preservative	4		60.00	
Sale of sausages containing excess preservative	2		35.00	
Sale of boerewors containing excess preservative	2		40.00	
Sale of boerewors not conforming to chemical standards	2		25.00	
Sale of sausages not conforming to chemical standards	4		80.00	
Sale of fruit juice not conforming to chemical standards	6		90.00	
Sale of ground ginger not conforming to chemical standards	1		15.00	
Sale of ground cinnamon not conforming to chemical standards	1		15.00	
Sale of ice cream not conforming to chemical standards	1		15.00	

Code Contravened	Admitted Guilt	Found Guilty	Fine Paid	Remarks
			R	
MOSQUITO REGULATIONS				
Permitting mosquito development	2		30.00	
RODENT REGULATIONS				
Failure to rodent-proof premises	1		15.00	
	210	32	R3503.00	

XI. MILK SUPPLIES

Due to the geographical position of Durban with sugar farming and beef production predominating in the North and sugar production as well as a series of holiday resorts in the South, the City's milk shed is restricted mainly to the Natal Midlands, the Drakensberg foothills and East Griqualand; 11% (12%) of the City's milk being drawn from the latter area. Figures in parenthesis in this chapter refer to 1965.

Milk from 596 (618) registered producers was either consigned directly to the City in cans or bulked and refrigerated at ten inland depots and transported in insulated tankers. Approximately two-thirds of the milk arrived in the City in this manner.

The installation of refrigerated milk tanks on producers' premises from where the milk is collected in bulk by road tankers is gaining in popularity and seven (three) of these tanks were in operation with many more farmers contemplating a switch over to this system which has very obvious advantages over the older conventional methods.

Three pasteurising depots, situated in or on the periphery of the City received and processed the milk. The distribution within the City was by means of refrigerated pantechnicons to distributing depots and handcart delivery to householders.

Sterilisation of milk by means of modern equipment was carried out by two of these factories and only milk from registered sources was used. Approximately 3,250 gallons of milk is processed in this manner daily.

Milk Gallonage

The average daily intake during the year was 45,012 (42,636) gallons. Approximately 22.2% (20%) of this quantity was sold outside the City boundaries in adjoining towns and to shipping after being processed.

Sampling

Regular sampling of milk and milk products was carried out and in addition to routine sampling for the departmental milk laboratory, milk and allied products were submitted to the City Pathologist, the City Analyst, the local State Bacteriological Laboratories and the State Chemical Laboratories, Pretoria.

I. Samples taken under the Food, Drugs and Disinfectants Act and submitted to -

(i) City Analyst	: Cream	37	(36)
	Ice Cream	71	(52)
(ii) State Chemical Laboratories	: Milk	171	(156)

II. Samples submitted to the City Pathologist for Bacterial Examination

Milk	153
Cream	4
Ice Cream and Soft Dairy Mix	38

III. Samples submitted to the State Bacteriological Laboratories for Tuberculosis Examination (Biological)

38 (35)

IV. Samples submitted to the Departmental Milk Laboratory

Raw bulked herd milk	:	5,209	(5,243)
Pasteurised milk	:	1,108	(1,224)
Pasteurised Cream	:	173	(192)
Ice Cream	:	962	(919)
Soft Dairy Mix	:	348	(380)
Iced Confections	:	203	(149)

Prosecutions

Food, Drugs and Disinfectants Act	:	Nil	(1)
Milk (and Milk Products) By-laws	:	4	(5)
Public Health Act	:	1	(Nil)

Control of Milk Supplies

In order to control all aspects of the City's milk supplies which includes the structural and hygienic requirements of the relevant legislation the following staff are employed on full-time milk and milk products control.

1 Veterinary Officer
1 Senior Health Inspector
3 "Country" Health Inspectors
2 Lady Laboratory Technicians
1 European Health Assistant (Sampling)
1 Indian Laboratory Aid

Country as well as City inspections were regularly carried out, the staff being guided to a great extent by the laboratory results obtained on raw and heat treated milk.

Statistics - Inspectional Programme

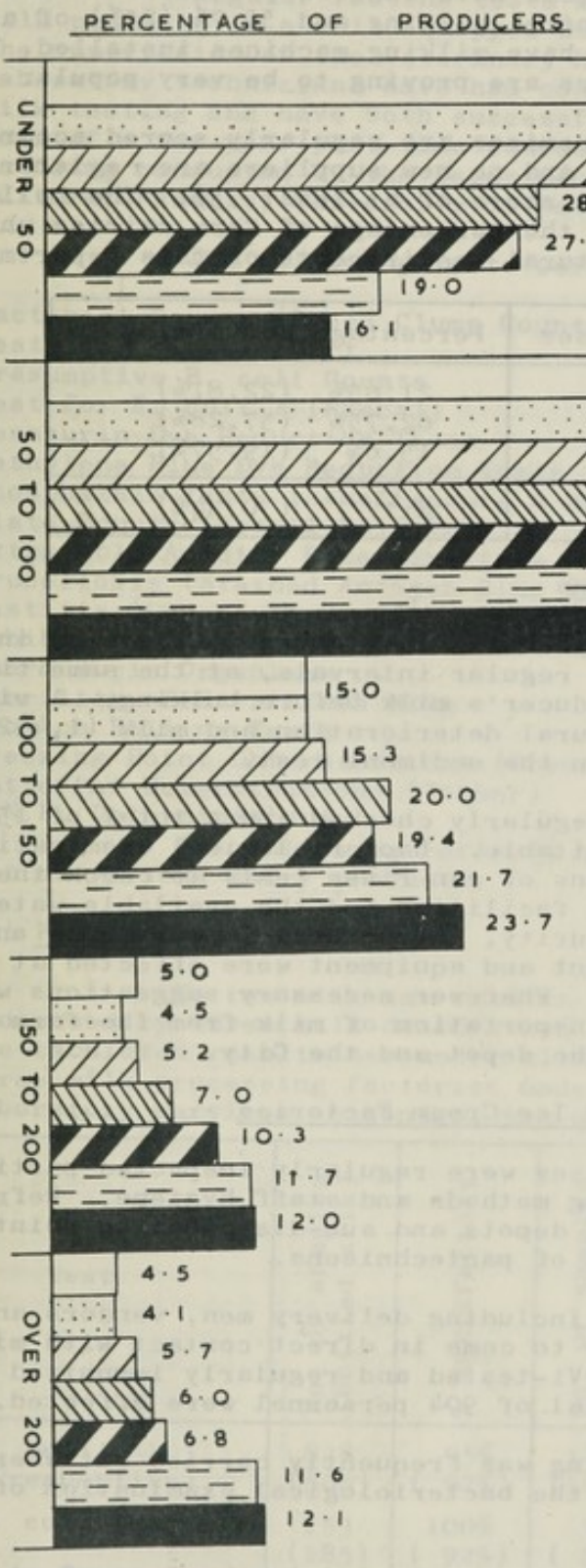
No. of City inspections	1,036	(1,593)
No. of Ex-City inspections	1,488	(1,575)
No. of initial dairy inspections	37	(82)
No. of country depot inspections/sampling	217	(262)
Total No. of dairy inspections	2,524	(3,168)
No. of personal notices served on producers	639	(763)
No. of written notices served on producers	669	(628)

During the period under review 33 (64) new producers were registered and 55 (46) went out of production. The total number of registered producers at the end of 1966 was 596, showing a decrease compared with the number (618) registered in 1965.

Further decreases in the number of registered dairymen in future are to be expected resulting from the inroads made on land available for milk production by cane and timber growers, but this should not necessarily adversely affect the quantity of milk produced.

The average daily production increased from 56,250 to 62,974 gallons and this is also reflected in a marked increase in the average individual production of 91.34 gallons in 1965 to 105.6 gallons for 1966. The accompanying graph illustrates a breakdown of fresh milk production on a daily production basis and clearly indicates a trend in the right direction.

No new dairymen were registered unless effective mechanical refrigeration was installed on their premises and producers with constantly unsatisfactory bacteriological results were required to effect the necessary improvements to their existing cooling facilities. At the end of 1966, 79.2%



YEAR	KEY	NO OF REGISTERED PRODUCERS	AVERAGE DAILY PRODUCTION	AVERAGE DAILY MILK INTAKE INTO DURBAN
1960		710	72·0 GALS	33648 GALS
1961		735	67·4 "	34701 "
1962		659	76·0 "	36139 "
1963		621	75·4 "	37646 "
1964		600	95·3 "	40313 "
1965		618	91·3 "	42313 "
1966		596	105·6 "	45012 "

CLASSIFICATION OF REGISTERED MILK PRODUCERS ON A DAILY PRODUCTION BASIS AND RELATED INFORMATION

(75%) producers had mechanical refrigeration installed on their farms.

Labour problems have induced producers to make increasing use of mechanical milking and 55.7% (25%) of all registered dairymen now have milking machines installed. The various types of parlours are proving to be very popular.

Producing premises are regularly scored according to a set marking system and no new suppliers are registered unless they can attain a score of at least 75%. The following table is a breakdown of the percentage of farm dairies which complied with the structural requirements of this Department:

Standard of Premises	Percentage conforming to
91% - 100%	21.65% (22.81%)
81% - 90%	62.75% (57.28%)
71% - 80%	15.6% (19.57%)
Below 71%	Nil (0.34%)

Inland Balancing Stations

The "country" dairy inspectors visited and inspected these depots at regular intervals, at the same time sampling individual producer's milk before bulking. A vigil was kept for any structural deterioration and milk (1,452 gallons) was rejected on the sediment test.

Cans were regularly checked and a total of 153 were condemned as being unsuitable. Bacteriological examinations were carried out by means of can rinse tests to check the efficacy of the can washing facilities and the available water supply was tested for purity. Structural improvements and the installation of new plant and equipment were effected at several country milk depots. Wherever necessary suggestions were made to improve the transportation of milk from the farm to the depot and between the depot and the City.

Pasteurising Depots and Ice Cream Factories

These premises were regularly inspected particularly in regard to handling methods and staff hygiene. Refrigeration facilities at all depots and sub-distributing points were checked as well as that of pantechnicons.

All staff, including delivery men, vendors and factory workers, liable to come in direct contact with milk and its products, were Vi-tested and regularly immunised against typhoid. A total of 904 personnel were affected.

Line sampling was frequently carried out wherever indicated necessary by the bacteriological examination of the final product.

Improvements were recorded in the form of structural additions and the installation of new plant and equipment.

Unlicensed Milk

Regular checks were made at the Durban Railway Station, tearooms, restaurants and hotels to ensure that only milk from registered sources entered the City. The introduction of raw cream from certain unlicensed premises was dis-

covered and legal action taken against the party responsible.

Laboratory Control of Milk Supplies

Regular routine tests were carried out on milk and milk products in a well equipped Departmental laboratory under the supervision of the Veterinary Medical Officer. Both lady laboratory technicians have had considerable experience in milk testing and have both successfully completed the first year of a two-year part-time course in Dairy Technology which is being conducted by the Department of Dairying of the Agricultural Faculty, University of Natal.

The following tests were carried out:-

Bacterial Counts (Breed Clump Counts)	93	(56)
Tests for Visible Dirt	5,256	(5,561)
Presumptive B. coli Counts	3,015	(3,095)
Test for E. coli I (Faecal)	303	(357)
Resazurin Dye Reduction Tests	6,225	(5,924)
Methylene Blue Dye Reduction Tests	463	(Nil)
Phosphatase Tests (Ashaffenburg & Mullen)	2,780	(2,677)
Plate Counts (Astell Roll Tube)	2,978	(3,252)
Titratable Acidity Determinations	45	(40)
Brucellosis (Stained Antigen Ring Test)	1,457	(1,188)
Mastitis (Leucocyte Count)	5,168	(5,494)
Inhibitory Substances (T.T.C. method)	4,866	(4,558)
Thermoduric Organisms	6,880	(7,220)
Sterility of Sterilised Milk	15	(25)
Clot on Boiling Tests	20	(24)
Freezing Point Determinations (Cryoscope)	3	(5)
Butterfat Determinations (Gerber)	5	(6)
S.N.F. Determinations	5	(6)

The following reflects a summary of tests carried out on various dairy products.

(a) Pasteurised Milk

No raw milk was sold in the City. Pasteurised milk, processed by three milk dealers was sampled every week day with the tabulated results hereunder although it is of note that all three milk processing factories made extensive use of their own laboratory services to control the quality of their products.

Test	No. of samples (bottled milk)	% Satisfactory	No. of samples (milk in cans)	% Satisfactory	No. of samples (carton milk)	% Satisfactory
B. coli (Presumptive)	828 (866)	95% (92%)	141 (142)	92% (91%)	139 (216)	93% (89%)
B. coli (Faecal)	153 (185)	100% (92%)	30 (20)	100% (100%)	20 (15)	100% (100%)
Phosphatase	828 (866)	100% (100%)	141 (142)	100% (100%)	139 (216)	100% (100%)
Plate counts	828 (866)	84% (81%)	141 (142)	86% (71%)	139 (216)	84% (89%)
Thermoduric organisms	828 (816)	64% (57%)	141 (142)	62% (56%)	139 (216)	60% (67%)

Test	No. of Samples (Bottled milk)	% Satisfactory	No. of samples (Milk in Cans)	% Satisfactory	No. of Samples (Carton milk)	% Satisfactory
Methylene Blue	224	100%	-	-	-	-
Resazurin	105	90%	-	-	-	-
Antibiotics	15 (20)	94% (95%)	2	100%	4	100%

An arbitrary standard of 15,000 organisms per ml. was used for thermoduric organisms. The in-media "flash" method was employed for the determination of these organisms.

Satisfactory results were always obtained on tests for sterility on sterilised milk processed by the two main milk dealers in the City.

(b) Ice Cream

This commodity was manufactured by two milk dealers in Durban but in addition ice cream was also introduced from the Rand and Pretoria by two firms. Factory wrapped ice cream was regularly tested with the following satisfactory results:

Test	No. of Samples	% Satisfactory
Phosphatase	388 (409)	100% (100%)
B. coli (Presumptive)	388 (409)	95% (94%)
E. coli I(Faecal)	10 (12)	100% (100%)
Plate Count	388 (409)	100% (99%)
Methylene Blue	219	94%

In addition to the above, samples of bulk ice cream (scoops) were regularly procured from bazaars, tearooms and restaurants to check the hygienic handling of this product. A total of 115 (98) such establishments were sampled with the following results:

Test	No. of Samples	% Satisfactory
Phosphatase	574 (510)	100% (100%)
B. coli (Presumptive)	574 (510)	60% (72%)
E. coli I(Faecal)	123 (28)	94% (90%)
Plate Count	574 (510)	76% (80%)

(c) Soft Dairy Mix

All soft dairy mix was manufactured by one ice cream factory in the City. Some 18 (15) tearooms and restaurants were licensed to dispense this commodity as well as a number of vans. The bacteriological standards of ice cream are applicable to this product and the following results obtained reflect a satisfactory state of affairs:

Test	No. of Samples	% Satisfactory
Phosphatase	348 (380)	100% (100%)
B. coli (Presumptive)	348 (380)	90% (67%)
E. coli I (Faecal)	25 (19)	100% (100%)
Plate Count	348 (380)	97% (94%)

(d) Cream

Only pasteurised cream, processed by the three registered milk dealers was sold to the public and this product too was sampled at regular intervals:

Test	No. of Samples	% Satisfactory
Phosphatase	173 (192)	100% (100%)
B. coli (Presumptive)	173 (192)	80% (76%)
E. coli I (Faecal)	3 (18)	66% (60%)
Plate Count	173 (192)	96% (92%)

(e) Iced Confections

Some of these "iced lollies" contain a quantity of milk or milk powder and they were therefore regularly sampled:

Test	No. of Samples	% Satisfactory
B. coli (Presumptive)	203 (149)	81% (50%)
E. coli I (Faecal)	25 (15)	96% (100%)
Plate Count	203 (149)	93% (92%)

(f) Producer (Farm) Milk

Each registered producer's milk was sampled approximately once a month at the receiving depots and the sample returned to the Departmental laboratory under refrigeration where the following tests were carried out:

Test	No. of Samples	% Satisfactory
Resazurin (1 hour)	5,209 (5,243)	87% (90%)
Visible dirt	5,199 (5,194)	93% (91%)
Antibiotics (T.T.C.)	4,261 (4,117)	94% (98%)
Thermoduric organisms	5,097 (5,137)	87% (84%)
Mastitis (Leucocyte Count)	5,957 (5,078)	87% (79%)
Brucellosis (Ring Test)	1,154 (1,154)	95% (85%)
Tuberculosis (Biological)	38 (35)	100% (97%)

A reading of less than 2½ in the one hour resazurin test was considered as unsatisfactory whilst an arbitrary standard of a maximum of 50,000 organisms per ml. was adopted for thermoduric organisms in raw milk. In the leucocyte count for mastitis any bulk milk sample having more than one million cells was considered positive. It was possible to demonstrate the presence of penicillin in varying concentrations in about 65% of all the samples that showed inhibition.

The following tests were carried out on tanker milk:

Test	No. of Samples	% Satisfactory
Resazurin (1 hour)	581 (586)	80% (92%)
Thermoduric Organisms	569 (720)	50% (50%)
Antibiotics	558 (435)	94% (93%)

Swab tests and rinse tests to check the efficacy of tanker sterilisation were done regularly and on the whole the results were satisfactory.

Milk Shortage

As in 1965, a shortage of available fresh milk was again experienced during the beginning of winter. Total average daily production figures show that during 1966 the lowest production was in May (53,064 gallons per day), and the highest during December (65,517 gallons per day) with an average of 62,974 gallons for the year. With an average daily intake of only 45,012 gallons there should theoretically have been no shortage at any time. However, a large percentage of fresh milk from registered producers is never actually consigned to Durban and is consumed elsewhere. Much of the milk consumed, for instance, in Pietermaritzburg and the South Coast is produced by dairymen registered with this Department.

During April and May a total of 50,944 gallons of industrial milk from Underberg and Heilbron was allowed into the City for the sole purpose of manufacturing sterilised milk. This had the effect of releasing for the fresh milk trade a quantity of 2,500 gallons daily which would normally have been used for sterilisation.

A further 6,000 gallons of fresh milk was also introduced from the Rand.

Animal Diseases Affecting Milk Supplies

Regular routine testing of milk supplies for certain pathogens was carried out and producers advised on the control and eradication of diseases that were of public health significance and could affect milk production. A close liaison was maintained with State Veterinarians and private practitioners and relevant information was regularly interchanged. The Veterinary Medical Officer also kept in touch with animal husbandry officers and frequently consulted the professional staff of the Department of Dairying, University of Natal.

Mastitis

This disease is a major problem in Natal and the basic causes are unhygienic production methods and faulty milking machines. Both these factors are receiving constant attention and a considerable amount of research is being conducted throughout the Republic by various institutions on this important disease.

Brucellosis

Approximately 5% (15%) of all raw milk samples submitted to the Stained Antigen Ring Test for brucellosis gave either positive or a suspicious result. The reduction in the incidence is probably due to increased use of calfhood vaccination. The Veterinary Diagnostic Laboratory at Alberton found 10% out of a total of 3,958 antigen tests on blood serum positive and it is reported that 220 herds, involving 20,197 animals were immunised against the disease in Natal.

Tuberculosis

Biological tests were carried out on raw bulk milk from herds that were suspect, either as a result of abattoir findings or clinical examinations. A total of 38 such tests were done, all with negative results.

A total of 28,497 bovines, involving 288 herds, were tested by the State Veterinary Department in Natal and East Griqualand for accreditation, the interim scheme and diagnostic reasons. Eighty-five animals were found to be positive while 200 gave suspicious readings to the tuberculin test. Nine herds underwent treatment with tuberculostatic drugs and 109 herds were accredited as tuberculosis free.

Calf Mortality

Many future and potential milk producers were lost as a result of faulty and unhygienic calf rearing methods. Verminosis, calf paratyphoid, coccidiosis, navel ill, sweating sickness and pediculosis, as would be expected, went hand in hand with unscientific farming methods.

Other Diseases

(1) Lumpy Skin Disease

Several severe outbreaks were reported which not only caused heavy losses but those animals that recovered were set back considerably. Extensive use was made of vaccination.

(2) Piroplasmosis

Redwater caused the death of many thousands of cattle in Natal and is considered as the major cause of bovine deaths.

(3) Infertility and Genital Diseases

These diseases are considered as the greatest single factor affecting the economics of the dairy industry. Vibriosis, which is widespread, Trichomoniasis and Infectious Pustular Vaginitis particularly, are causing serious breeding problems.

The Natal Artificial Insemination Co-operative has rendered an admirable service in combatting infertility and generally improving the quality of dairy herds. Its bull station at Windsor Park, Thornville Junction, offers semen from six breeds and there were twenty-three bulls in use. By means of fourteen sub-centres distributed throughout Natal and East Griqualand its services were and are within the reach of all dairymen.

(4) Poisoning

Plant poisoning due to Lantana (L. rugosa) senecio, tulip, slangkop, matrecaria, crotelaria, green oats and claviceps paspali have been reported as well as deaths due to mineral poisoning. The careless use of anthelmintics by farmers has also caused stock losses.

Certain of the aforementioned information has been kindly supplied by the Assistant Chief, Veterinary Field Services, Natal Region.

General

Ten final year veterinary students from Onderstepoort spent three weeks in the Veterinary Hygiene Section of this Department and the City Abattoir as part of their vacational training in Special Hygiene and Veterinary Public Health.

In conjunction with the Natal and East Griqualand Dairy Farmers' Association this Department provided a stall at the Royal Agricultural Show, Pietermaritzburg, during April. Demonstrations and models of interest to dairymen were exhibited and two dairy inspectors were on duty to assist dairymen with any problems. At the request of the Ixopo Agricultural Society a similar exhibit was displayed for one day at the Ixopo Agriculture Show in August with a dairy inspector in attendance.

The Annual Scientific Congress of the South African Veterinary Medical Association at Onderstepoort was attended by the Veterinary Medical Officer. Meetings of the Natal Society of Dairy Technology were regularly attended by the Veterinary Medical Officer who also served on its Technical Sub-Committee.

The Veterinary Medical Officer assisted the Durban Milk Distributors in the drafting of model dairy by-laws for the Natal Provincial Administration.

This Department submitted a memorandum to and representatives gave oral evidence before the "Committee for the Investigation of Certain Marketing Aspects Relating to Fresh and Industrial Milk and the Hygiene and Quality Control Thereof" which was appointed by the Ministers of Agriculture and which visited Durban in June 1966.

XII. FIELD HYGIENE

Durban with its warm sub-tropical climate provides ideal conditions for the multiplication of insect pests and a constant vigil has to be maintained by the Health Inspectorate to ensure that infestation is kept within reasonable proportions and is eradicated wherever practicable. In these daily tasks invaluable assistance is afforded by the specialised Field Hygiene Section, comprising 17 Europeans and 117 non-Europeans, operating under the whole-time supervision of a Senior Health Inspector.

Generally, this staff is employed on pest control measures in Municipal premises and on town lands and, as far as private premises are concerned, advice and assistance are given on various problems associated with rodents and pests. Only when a pest problem cannot be overcome by the occupier or there is any difficulty in compliance with a notice does the Department carry out remedial measures in the case of certain pests. However, there is no encroachment on the preserves of private enterprise, the one main exception being the clearance of overgrown vegetation on privately owned land which service appears to be unattractive to non-municipal operators. The main aspects of the Section's activities during the year are summarised as follows:-

Mosquitoes

As illustrated by the table below there was little variation in the total number of complaints compared with last year's figures which are shown in parenthesis -

Tins, drums, motor car tyres, etc.	207	(230)
Defective drains, sub-floor areas	35	(97)
Buildings under construction	57	(23)
Soakpits/septic tanks	79	(70)
Choked stormwater drains	32	(1)
Natural swamps	56	(25)
Sanitary fitments	38	(31)
Unsolved	64	(50)
Unjustified	50	(86)
Totals:	618	(613)

A serious mosquito nuisance occurred in a local river due to the withdrawal of the entire volume of water by a factory for industrial purposes and the discharge therein of the resultant effluent. Furthermore there was an interruption in the flow at a lower reach of the river due to obstruction by bridge building operations. These conditions, together with a large discharge of sewage from a burst main, resulted in the destruction of all natural life in the river and, apart from the creation of offensive conditions, gave rise to prolific mosquito development, this nuisance occurring as far away as a mile from the actual breeding points. The application of emulsifiable insecticide proved ineffective and the use of oil had to be adopted

Anti-malaria oil also had to be employed from time to time to control development in disused quarries in the suburbs.

Biological control continued to prove its efficacy throughout the City and the employment of this means in the Beachwood swamps adequately took care of the situation until this method was seriously upset when road construction works obstructed a natural drainage outlet. Plant life decomposed leading to a marked decrease in the fish population,

and the natural balance was only restored after a major channelling operation by the Department's labour force. A further mishap occurred due to the removal of beach sand coinciding with heavy seas, when the natural outlet was blocked again. The biological control of mosquitoes also continued to have a beneficial effect on the Department's budget as the necessity for the application of costly larvicides to breeding foci was greatly reduced. However, the incidents referred to above demanded the use of oil and as a result the gallonage consumed in 1966 totalled 594 as against 76 last year.

The Department continued its programme of periodically culling tilapia from the sewage treatment ponds at kwaMashu and Chatsworth to prevent overstocking and numerous loads of fish were regularly netted for stocking adjacent areas and for composting purposes. In the latter connection, distribution of this valuable protein for human consumption has not been resumed as yet as there remains doubt as to its complete safety. Research into the question of salmonella contamination is still proceeding.

The public health implications of sewage treatment using small anaerobic digestion ponds preceding aerobic ponds as carried out at the Chatsworth (and Umlazi) townships, incorporating, inter alia, the biological control of mosquitoes with tilapia, are summarised in appendix "C" of this report.

Arising from the occurrence of malaria in Zululand and nearer the City than usual the possibility of this disease occurring in Durban was continually kept in mind and local surveys were carried out regularly. Of 1,502 anopheline larvae examined in the Department's laboratory no A. gambiae were identified, the majority proving to be A. coustani and A. squamosis.

Rodents

Despite the reports overseas of rodents developing a strain resistant to blood anti-coagulant poisons, this Department continues to achieve satisfactory results from its use in anti-rodent measures and on rodents under test in the Department's laboratory.

Rodent-proofing tests on various building materials submitted for approval for the cladding of walls, or for internal partitioning were performed. Samples of fibre board of various types and makes, for which a high degree of resistance to rodent penetration was claimed, showed that apart from boards manufactured with an asbestos "base", none could be deemed to have any special rodent-proof qualities. Thus, while most industrialised materials were cleared for restricted application, approval for use in food establishments was withheld.

The joint anti-rodent liaison and destruction programmes with the State and Port Health authorities were regularly maintained in harbour and contiguous areas, and these activities are summarised below:

Rodents destroyed		Rodents submitted for Plague Index		Poison used	
1965	1966	1965	1966	1965	1966
2,320	1,851	236	265	3,015 lbs 1,324 grms	3,125 lbs 1,557 grms

To determine the degree of rodent infestation and activity, large areas of the City, both residential and commercial, were surveyed and any evidence of rodents was noted for attention later in a systematic poisoning programme. This anti-rodent campaign proved most useful in indicating the extent of infestation, the efficacy of destruction and the value of new methods and poisons which were tried out. Furthermore confirmation was obtained that no resistance to the poisons in use had developed. It was found that a European with a non-European assistant were able to service 15 poisoning points daily. Whilst, as is usually the case, few rodent carcases were actually recovered, the large amount of poison taken indicated a lack of bait-shyness and a probable heavy kill. Special campaigns of this nature will be undertaken from time to time in the future.

During the year the State Health Department undertook an examination of the Department's anti-rodent methods. Apart from a few minor suggestions the investigating officials found no cause for criticism.

Bugs

During the year 2,910 rooms in dwellings in the Municipal Indian Township of Chatsworth were sprayed with insecticide for the destruction of bedbugs, at the cost of the occupier. Following the successes in this campaign the same procedure was adopted in November at the Municipal Indian housing scheme at Merebank, from which date to the end of the year 1,242 rooms were treated at the same cost of 20 cents per room.

A random survey of the dwellings at kwaMashu Bantu Township disclosed that of the premises inspected, 63% were bug infested. The Director of Bantu Administration was requested to authorise a similar scheme to that applicable in the Indian townships but one of the difficulties to be overcome may prove to be the lack of suitable means of recovering the costs from the occupiers.

Unfortunately the use of hydrogen cyanide gas by private exterminators has not been completely discontinued in favour of the insecticides with a residual effect. Not only is this gas ineffectual from the reinfestation viewpoint but it is lethal to humans. It is regrettably necessary to record that a Bantu died as a result of the use of this gas by a private fumigator.

Bilharzia

At points in the City where the possibility of infection exists, suitably worded warning notice boards were erected and health education teams continued to deliver talks on the disease to scholars and others as well as to distribute the Department's code of practice on the subject. The staff persisted in their efforts to achieve a measure of protection for the public and attention was paid during the year to biological control methods. From observations made, it was proved that under laboratory conditions Gambusia minnows will feed voraciously on cercariae but whether this will ever prove a material factor in the field control of the disease seems doubtful. Wherever vector snails were located these minnows were introduced if the conditions were suitable for the fish. The clearance of overgrowth from the banks of streams also proved effective in controlling snails but their multiplication appeared to be accelerated if the cuttings were not removed. Experimental work along the above lines will continue as far as circumstances permit.

Cockroaches

This pest is a very prolific breeder in Durban and a constant war against them is waged by housewives and businessmen. The Department's main function is to treat the public drainage system and Municipal undertakings, give advice to occupiers and to take legal steps in cases of unclean conditions and infestation in food establishments.

The organo-phosphate insecticides were reasonably satisfactory but failed to produce the results achieved by the chlorinated hydrocarbons when they first became available. These insects, particularly the germanica species, appeared to have become completely resistant to all these latter preparations. In markets and other food storage areas, pyrethrin was the only insecticide used. Some success was achieved with the thermal fog machine but the jet, which produces a cold fine-particle mist, proved more effective. In drains and non-food premises a low nozzle delivery jet was employed in conjunction with knapsack or pressure sprayers to apply an organo-phosphate insecticide from which residual protection of up to six weeks was attained.

Flies

Complaints lodged this year were less than for 1965, the sources of the nuisance being summarised as follows:

	1966	(1965)
Garden cuttings and compost heaps	41	(60)
Manure	21	(28)
Poultry keeping	19	(37)
Sports fields	-	(-)
Refuse receptacles	36	(35)
Stables	-	(2)
Dumping on vacant land	5	(20)
Other conditions	22	(30)
Unsolved	16	(27)
Unjustified	39	(49)
Totals:	199	(288)

A frequent cause of nuisance was the surcharging of sewers and, in the case of one factory, regular treatment over a period of two months was necessary before all fly development could be eliminated. Nuisance also arose from the delivery of a very large quantity of "immature" pig manure for use on main highway embankments and the problem was brought under control by the use of insecticidal powders and poison baits.

Following the accumulation of an abnormally large number of animals for slaughter at the Municipal Abattoir, the question of fly control in manure gave cause for concern. However, intensification of remedial measures and prompt transportation of manure forestalled any nuisance.

The use of fly traps for establishing the degree of infestation, and in some cases for the control of adult flies in the precincts of sewage ponds and refuse tips proved most satisfactory.

Insecticides

The Department continued its experiments with insecticidal products and most new preparations were tested in the various fields. A new organo-phosphate larvicide on the market, which was claimed by the manufacturers to have

a high safety factor with vegetation, mammals and fish life, proved encouraging for the control of mosquito development. Wherever practicable, wettable insecticidal powders were successfully used against mosquitoes in preference to emulsifiable liquids so leading to savings in costs and less damage to plant life.

From the public health standpoint, current expansion in the commercial pest extermination sector is viewed with some concern as many operators of varying experience are securing licences to carry out pest control work in private premises. Some of the claims for success in cockroach control in particular by insecticides would suggest that the manufacturers' instructions are not being adhered to and a possible health risk may exist. The Department possesses no legal power to intervene, but it is known that the Minister of Health in 1965 appointed a Committee of Enquiry into the safeguarding of man against poisons whose terms of reference were to enquire into the danger attendant upon the use of all preparations which may be injurious to health.

XIII. ALLIED HEALTH SERVICES

Certain services are not provided by this Department but nevertheless have a direct bearing upon the public health or are subjects incidental thereto. I am indeed indebted to the Municipal Departments concerned for the following contributions:-

ABATTOIR

The City Council has decided in principle to erect a new abattoir which will probably be sited in the Clairwood industrial area in proximity to the new Bulk Sales Market.

In the meantime, considerable capital expenditure will be incurred in the present premises as it is proposed to extend slaughtering, sales hall and by-products plant facilities by approximately 40%, and lairage by approximately 30%, to carry over the interim period.

Slaughtering

All slaughtering is performed in accordance with the provisions of the Slaughter of Animals Act, and the subjoined particulars of the animals slaughtered and condemned, which show a trend of an increased throughput of approximately 10% per annum, reflect these activities for 1966.

Details	Bovines	Calves	Swine	Sheep	Goats
Whole carcases condemned	1127	216	1660	1126	105
Portions of carcases condemned in lbs	445200	64	99320	3004627	28771
Total number of animals slaughtered	153622	13472	101260	685726	24256

Ante-Mortem Inspection

Animals are subjected to inspection by veterinarians, and suspected cases of illness or disease are removed to a special quarantine section and slaughtered separately.

Meat Inspection

Carcases and offals are inspected by a staff of qualified meat inspectors under the supervision of veterinarians.

Disposal of Waste and Condemned Materials

These items are processed in a by-products plant, from which carcase meal, blood meal and tallow are manufactured, and sold to farmers and others.

Cold Storage

Elven chambers, totalling 170,000 cubic feet are available for use by members of the trade. The Meat Control Board leases eight of the rooms.

Export

A considerable quantity of carcases and de-boned meat, derived from animals slaughtered at this Abattoir, has been exported to Britain and other countries. The Durban Abattoir is one of the few recognised for this purpose.

Tuition

Final year B. V. Sc. students were accommodated at the Abattoir during their vacation period to gain experience of abattoir methods and control. A number of candidates for the examination as meat inspectors also carried out their practical training at the Abattoir.

ENGINEERING SERVICES

(a) Water

The consumption of water in Durban, corrected to the nearest million gallons, is set out in the subjoined tables (last year's figures being reflected in parenthesis)-

Million Gallons				
Month	Monthly Total		Daily Average	
January	1956	(1885)	63	(61)
February	1751	(1792)	63	(64)
March	2103	(1990)	68	(64)
April	1897	(1833)	63	(61)
May	1894	(1779)	61	(57)
June	1769	(1623)	59	(54)
July	1865	(1724)	60	(56)
August	1844	(1819)	59	(59)
September	1806	(1750)	60	(58)
October	1928	(1806)	62	(58)
November	1800	(1768)	60	(59)
December	1903	(1871)	61	(60)

Total consumption		22,516	(21,640)
Daily average		61	(59)
Consumption for 24 hours ended 8 a.m.	: Maximum	78	(13th December)
	Minimum	42	(12th September)

With the backing of the large storage capacity of the Midmar Dam, no difficulty was experienced during the year in keeping the Nagle Dam full of water of a very high quality, and now that the third aqueduct from the Nagle Dam to Durban Heights has been brought into commission, there should be no difficulty in bringing in adequate supplies from the Umgeni River.

Twenty-eight miles of new water mains were laid throughout the City and improvements carried out to the existing reticulation system.

Further progress was made by Departmental construction on a 10-million gallon reservoir in the Glenwood area for the Central City zone. In the Southern zone of supply, construction was commenced by contract of a 5-million gallon reservoir at Mobeni to improve storage.

Surveys of beaches from Beachwood to Isipingo were made at monthly intervals. Control of the purification of water in 8 European public baths, 6 European paddling

ponds, 4 Coloured and/or African baths and one paddling pond for the latter communities was maintained by regular visits, analytical checks and advice to bath supervisors.

(b) Public Cleansing Services

To replace older vehicles and to cope with expansion of these services, 24 new refuse vehicles of 24 cub.yrd. capacity were purchased. In addition two compressing type refuse vehicles for use in the central areas were acquired.

The disposal of refuse by land reclamation methods still continues satisfactorily at the Bluff Valley and at Chatsworth, but it became necessary, through lack of space, to close down the Springfield Flats tip site at the end of the year. This tip site is being replaced by a new site bounded by Peter Road and Stromia Road in the Sea Cow Lake area, which will eventually be required for recreational purposes.

(c) Public Convenience

A new public convenience was built to meet the needs of the Indian community in Bombay Square, Merebank.

(d) Air Pollution

Control of smoke emission from factories, ships and locomotives was maintained, as also that of diesel smoke from vehicles.

On 27th May , 1966, Durban was declared an area wherein the provisions of Part 3 of the Atmospheric Pollution Prevention Act were applicable.

Odour control from oil refineries, the whaling station and from other industries, including that entering Durban from the North Coast was carried out as far as possible by means of discussions with the industries concerned.

Representations were made to firms on the matter of control of dust nuisance, and fuel burning appliances were monitored as before.

The incidence of inversion conditions as measured by the Airport authorities was noted and the measurement of sulphur dioxide and deposits at the 3 test stations was continued and the results of analysis forwarded to the Council for Scientific and Industrial Research.

(e) Progress with Sewerage Reticulation

(i) Trunk and Main Sewers

The planning of the trunk mains serving Reservoir Hills, portion of Clare Estate, Effingham, Riverside, Durban North, Virginia, the Umbilo and the Umkumbaan River catchments and the Umhlatuzana River catchment has been completed.

Tenders have been accepted for the construction of the section of the Umbilo Relief Sewer in the Collingwood Road/Recreation Road area of Clairwood, the construction of which is due to commence early in 1967. Tenders have also been accepted for the construction of a trunk sewer in Peter Road to serve a portion of the Sea Cow Lake area, the construction of which is also due to commence early in 1967.

(ii) Reticulation

To assist in the implementation of the fifteen year sewerage reticulation programme, Departmental designs are being supplemented by the appointment of Consulting Engineers. The construction of sewerage reticulation is in hand in the areas of Kenville, Reservoir Hills, Clare Estate, Puntan's Hill, Bellair and Hillary, and the design of reticulation in areas of Effingham, Sea View and further areas of Reservoir Hills and Clare Estate has been put in hand.

The reticulation in Bellair and Hillary will be brought into commission with the completion of the Southern Sewerage Works, and that in Kenville, Reservoir Hills and Clare Estate when the Northern Treatment Works are commissioned.

The construction of the Victoria Embankment pump station has been completed and work on the Maydon Road pump station is progressing. These two stations will replace the existing Albert Park station and Maydon Road station.

Tenders have been invited for the supply of pumping equipment for the Bayhead Pump Station which will serve the shipbuilding area of the Bayhead.

(f) Trade Effluents

Factory effluents were examined, pre-treatment methods were instituted, plants were inspected and advice given as in previous years. The frequency of sampling factory effluents was increased in order to improve control.

The water pollution control policy, covering all rivers, stormwater drains and trade effluents discharging into the Bay or sea was intensified and sources of pollution were traced. Chemical and bacteriological surveys of canals into which refineries and other industries discharge effluents were continued.

XIV. GENERAL

EXTENSION OF JURISDICTION

(a) Bayhead

Following upon development at the bayhead by the State, in its administration of the South African Railways and Harbours, as the site for ship building and ancillary industries, the City Council was involved in negotiating an agreement regarding the essential municipal services to be provided and the local control of the area. The Department was consulted regarding the public health aspects, both in respect of land to be retained by the Government and the premises leased to private enterprise, and it would appear that the suggestions will be acceptable to both parties.

(b) Welbedagt

By Proclamation No. 71 of 28th July 1966 some 57 properties on the Farm Welbedagt 1007 were incorporated into Durban for the extension of the Chatsworth Indian Housing Scheme. Unfortunately conditions in the incorporated area are rural in character and lacking in basic sanitation. Although redevelopment in due course will no doubt bring about an improvement, the Department was concerned at the conditions which existed and sought the co-operation of the City Engineer with a view to the provision of a safe public water supply and sanitary services at least in the populated parts.

(c) Proposed Incorporation

During the year the City Council considered proposals to incorporate the area under the jurisdiction of the Glenashley Town Board, re-align the boundary common with the Borough of Westville and incorporate part or the whole of the Local Health Commission's Public Health Area of Shallcross. No finality was reached by the year end.

CONFERENCES

The Department was again represented this year at a number of professional and technical meetings which included the Biennial Congress of the Institute of Public Health (City Medical Officer of Health and Deputy Chief Health Inspector), Semi-Synthetic Penicillin Conference (City Medical Officer of Health), National Conference on Health Education (Assistant Medical Officer of Health), the South African Veterinary Medical Association Annual Conference (Veterinary Medical Officer), and the Annual Conference of the South African Nursing Association and the South African National Council for Child Welfare (Chief Health Visitor). The City Medical Officer of Health continued to serve on the Natal Research Liaison Committee of the South African Council for Scientific and Industrial Research and he, or his representatives, continued to serve on a number of local committees of charitable, professional and other organisations.

Memoranda were submitted on several important subjects including the draft Animal Slaughter and Meat Hygiene Bill and "Certain Marketing Aspects relating to Fresh and Industrial Milk and the Hygienic and Qualitative Control thereof". In the latter connection the City Medical Officer of Health and certain other members of the staff gave evidence before the Investigating Committee when it sat in Durban.

Owing to the exigencies of the Department it could not be represented at the Royal Society of Health's International Health Conference at the Hague or at the annual meeting of the South African Nursery School Association or the South African National Cancer Association.

TRAINING FACILITIES

The Department was again called upon to assist with the in-service training of Municipal employees, in making available its facilities for the training of others, the provision of lecturers to educational institutions, and by permitting its employees to gain additional experience by undertaking training elsewhere. Veterinary students from Onderstepoort and Junior Planning Assistants on the staff of the City Engineer were afforded practical and theoretical experience within the Department, as were a number of trainee health inspectors, both European and non-European. The City Medical Officer of Health again undertook lectures and practical demonstrations to fifth year non-European medical students, and senior officials of the Department undertook extra-mural lectures to health inspector candidates for the National Diploma in Tropical Hygiene.

It is pleasing to record that this year, for the first time the Natal Technical College found it possible to conduct the Part I course for the National Diploma for Health Inspectors (part-time) and it is hoped that a further course will commence in 1967 concurrently with the Part II course for the 1966 intake. The M.L. Sultan Technical College also inaugurated a course for Indian students on the whole-time two year basis, and it is understood that some 15 candidates are in the class. This Department has a vacancy for an Indian health inspector which it has been unable to fill but there are prospects that the position will be remedied after the final examination in November 1967.

Also for the first time the Department was fortunate in being able to arrange for a series of mental health lectures to its health visiting staff. In the course of their routine duties, Health Visitors employed in the Department's child health service are called upon to deal with cases of mental ill health in children at its clinics and during domiciliary visits, and in keeping with modern public health trends it was considered desirable that the staff should be given appropriate instruction in psychological problems of childhood. As facilities for the desired instruction were not normally available in Durban, the Physician Superintendent of the Fort Napier Hospital in Pietermaritzburg very kindly arranged, at no cost to the City Council, a series of weekly lectures at King George V Hospital, Durban.

LEGISLATION

Food Inspection Regulations

The Minister of Health gazetted new Regulations relating to Food Inspection in Government Notice No. R.963 dated 24th June 1966 thus adopting for the first time a national code under the Public Health Act. In the past the legal instruments for the examination, detention, surrender, condemnation and destruction of unsound food were Section 141 bis of the Local Government Ordinance (Natal), No. 21 of 1942, and Section 6 of the Food By-laws for the City of Durban but the Regulations will be more authoritative particularly in the case of imported articles and those manufactured in or consigned from other Provinces. Suggestions made to the Secretary for Health were incorporated in the Regulations.

Closing of Schools Regulations

Amended Regulations regarding the Closing of Schools in connection with Outbreaks of Infectious Diseases were published by Government Notice No. R.1286 dated 26th August 1966 in substitution for the Regulations originally promulgated in 1922.

Rodent Infestation Regulations

The Regulations regarding the Prevention of Rodent Infestation of Buildings and Premises in Urban Areas (G.N.1380/1930) were replaced by new Regulations regarding the Prevention of Rodent Infestation and Storage of Grain, Forage etc. in Urban and Rural Areas which were promulgated under Government Notice No. R.1411 dated 23rd September, 1966. The terms of the new legislation incorporate the Department's suggestions and now authorise a local authority to carry out rodent destruction measures on private premises at the cost of the owner or occupier in default of a notice served by the Medical Officer of Health. Owners, occupiers or their agents are also now legally precluded from demolishing buildings without taking all necessary steps to destroy all rodents on the premises.

Mattress-Makers and Upholsterers Regulations

The Minister of Health notified his intention in Government Notice No. R.547 of 7th April 1966 to substitute new regulations for those originally made in 1938, and invited criticisms of the terms thereof. The City Council had no objection in principle to the proposals but adopted two recommendations made by the Department for submission to the Secretary for Health. Firstly, it was felt that foam rubber and plastic materials should be excluded as these modern materials presented no particular public health problem and, secondly, there would appear to be no essential need to limit the granting of registration to an annual basis. The new regulations have not been gazetted as yet.

Viral Hepatitis

The Regional Director, State Health Services, suggested last year that infectious hepatitis should be made notifiable in terms of the Public Health Act. This Department had also been thinking on similar lines and the City Council adopted the recommendation which was duly published on 7th October 1966. In terms of Government Notice No. 1551 viral hepatitis has been made a notifiable disease in the municipal areas of Johannesburg, Pretoria, Durban and Port Elizabeth.

By-law Penalties

Arising from an efficiency and economy review of the Department's activities the City Council resolved to uplift the amount of fines for contraventions of the by-laws to R50 for a first offence and R100 for a second or subsequent offence, in keeping with the amended empowering local government ordinance. The necessary amendments, gazetted on 4th August 1966, affect the Food By-laws, Milk (and Milk Products) By-laws, By-laws relating to Dry-Cleaners' and Dyers' Establishments, Laundries and Depots and the general Public Health By-laws.

MEDICAL BUREAU

A clinic is held daily at the City Health Department headquarters for the purpose of conducting medical examinations of prospective entrants to the Municipal service (European, Coloured and Indian employees) or for extensions of service and for the provision of medical attendance to those categories of municipal employees who are entitled thereto by their conditions of service. In some cases, the medical officer visits these sick employees at their homes. It is the general practice however for employees who become ill at night, or who are resident in distant parts of the municipal area or outside it, to call in their private doctors. All personnel enjoying the privilege of free medical attention are required to report to the medical officer at the medical bureau before returning to duty. Medical boards on municipal employees are also held when necessary, on receipt of written requests from the Head of Department concerned.

The extent of these activities during the year is summarised in the table below :-

	European Males	European Females	Non-Europeans	Total
Entrance Examinations	1,489	308	605	2,402
Medical Boards	17	1	2	20
Consultations	1,455	-	-	1,455

The decision of the City Council to discontinue the provision of free medical attention to municipal employees in the specified categories, who are engaged after 31st July, 1965, will result in a progressive diminution in the number of consultations, over a lengthy period. The figures for 1966 represent a decrease of 7% in comparison with the year 1964.

XV. STAFF AND FINANCIAL SUMMARY

STAFF RECRUITMENT

The problem of filling staff vacancies, particularly for professional and technical posts, which has confronted this Department for the past few years has not eased.

Staff wastage, attributable to many factors, appears to be higher now-a-days than was the case in the past.

(a) Medical: The filling of clinical medical posts gave cause for much anxiety. Not only are clinical medical officers difficult to find but the existence, in a small staff, of one or two vacancies for clinical personnel seriously hampers clinic services.

Due to a lack of suitable applicants, it was not possible to fill two vacancies for clinical medical officers, despite the attraction of an enhanced salary scale, and steps were taken to re-advertise these vacancies.

(b) Technical: In greater or lesser degree difficulty has been experienced for some years in obtaining Health Inspection and Health Visiting staff. Although from time to time there has been an indication of an improvement, this has proved to be short-lived.

Whilst it was just possible for most of the year to maintain the authorised complement of European Health Inspectors and Health Visitors the picture was less satisfactory in regard to qualified non-European staff. Attempts to fill vacancies for two Bantu and one Indian Health Inspectors were unsuccessful.

In view of the number of Indian students taking the course for the National Diploma for Health Inspectors there is a possibility, in a year's time, of filling the vacancy for Indian Health Inspector when the first batch of qualified students becomes available. The outlook for filling the two posts of Bantu Health Inspector is less promising. The only training facilities available in Natal for Bantu student health inspectors are those at the Edendale Technical College. However, as successful students from that institution are under an obligation to work for the State Department of Health or a local authority for a period of at least two years after qualification, as a condition of Government subsidisation of the studies, there is some prospect of recruitment from that source at a later date. As appointees to the post of Bantu Health Inspector in this Department necessarily have to be members of the Zulu ethnic group, the likelihood of recruiting suitable applicants from other parts of the Republic is poor.

The outlook for Indian health visiting staff is worse than it was last year as it is understood that no course for Indian student health visitors is now available.

AMENDMENTS TO STAFF ESTABLISHMENT

The following amendments to the staff establishment were authorised by the City Council and, where applicable, the approval of the Secretary for Health for part-refunds in terms of the Public Health Act was obtained.

Section	Group	Designation of Post	No.of Posts	Remarks
(a) Additions to Establishment				
Administration	European	Personal Assistant	1	Personal Assistant to City Medical Officer of Health
Venereal Diseases	European	Clinical Medical Officer	1	Substituted for post of Bantu Medical Officer
Health Education	European	Senior Health Inspector (Health Education)	1	Replaces Female Health Educator
	Indian	Junior Lecturer	1	
Health Inspection	Bantu	Health Inspector	2	
Immunisation	Indian	Nurse	1	
	"	Overseer	1	
	Bantu	Nurse	1	
Field Hygiene	Indian	Overseer	1	
	Bantu	"	1	
			11	
(b) Posts deleted from Establishment				
Venereal Diseases	Bantu	Medical Officer	1	Inability to recruit
Health Education	European	Health Educator (Female)	1	
Field Hygiene	European	Senior General Assistant	1	Re-organisation
	"	General Assistant	1	of
	Bantu	Spotter	1	programmes
			5	

Regrading and Re-designation of Posts

Several reports were submitted by the Department recommending salary improvement and re-designation of posts as a result of which the City Council approved of the following:-

(a) A position of Senior Typist responsible for reception and typing duties in the Executive wing was regraded and re-designated Principal Lady Assistant;

(b) A position of Lady Assistant in the Milk Laboratory was regraded and re-designated Laboratory Assistant;

(c) Two posts of Indian Labourer in the Field Hygiene Section were re-designated Assistant;

(d) The requirements for the posts of Spotter (Indian) and (Bantu) were revised to facilitate the advancement of the more intelligent type of labourer.

Remuneration of Refundable Staff

The remuneration of staff whose emoluments are subject to part-refund in terms of the Public Health Act was revised within the salary scales approved in State Health Circulars Nos. 2, 5 and 12 of 1966 and the Secretary for Health's approval thereof was obtained.

Proceedings under the Industrial Conciliation Act

Certain groups of refundable health personnel found it necessary, through the agency of their employees' association, to invoke the Industrial Conciliation Act in regard to salary claims. It is pleasing to record that in all the cases concerned agreement was reached with the City Council and subsequently approved by the Minister of Labour.

It is regrettable that the refundable health personnel, in order to overcome legislative and other difficulties, finds that there is no alternative but to resort to the machinery of the Industrial Conciliation Act for the settlement of disputes appertaining to their emoluments.

Practical Training Facilities for Public Health Students

The City Council, following upon a report from this Department, has granted facilities to trainee health inspectors to obtain the requisite practical training in health inspection, meat inspection and building inspection in the Municipal departments concerned, so as to satisfy the requirements of the regulations pertaining to the National Diploma for Health Inspectors.

In conformity with the policy which has been followed for many years past, this Department continued to provide practical training to students from outside the Department taking veterinary, health inspection and health visiting courses and a number of European, Asiatic and Bantu students were accommodated during the year. The Department's staff has co-operated to the fullest extent in this matter which is of such vital concern to all public health authorities in the Republic.

Subsistence Allowances : Dairies Inspectors

As a result of an application submitted by the health inspectional staff engaged on country dairies inspection for an enhanced subsistence allowance to meet the increased hotel tariffs, representations were made to the City Treasurer and it is pleasing to record that the allowance was improved to the satisfaction of the staff concerned.

Retirement

Miss E. Goddard retired on superannuation in November 1966, after 21 years as head of the Health Education Section. She had been largely responsible for building up this section to the efficient organisation which it is today and many of the activities and programmes of the section which are routinely carried out were initiated by her.

STAFF ESTABLISHMENT

Section and Position	No.	Incumbent/Remarks
EXECUTIVE		
City Medical Officer of Health	1	Dr. C.R. Mackenzie, M.B., B.Ch., D.P.H., D.T.M.& H; F.R.S.H.
Deputy City Medical Officer of Health	1	Dr. G.L. Hilton-Barber, M.B., Ch.B., D.P.H.
Assistant Medical Officer of Health	2	Dr. N.L. Becker, M.B., Ch.B., D.P.H. Dr. M.G. van Schalkwyk, M.B., Ch.B., D.P.H.
ADMINISTRATION		
(a) European		
Principal Assistant (Admin.)	1	Thomson, A.H., M.R.S.H.
Personal Assistant	1	Poplett, D.J., M.R.S.H. (w.e.f. 19.9.66)
Senior Assistant (Financial)	1	Donkin, F.D.
Senior Assistant (Technical)	1	Kibble, G.A., Cert.R.S.H. (w.e.f. 31.10.66)
Chief Clerk (Grade I)	2	(Blignault, L.V., Cert. (R.S.H. (with e.f.28.12.66) (Dyer, R.B., Cert.R.S.H.
Senior Clerk (Grade II)	4	
Clerk (Grade I)	6	
Clerk (Grade II)	6	
Principal Lady Assistant	2	
Senior Lady Assistant	2	
Lady Assistant	8	
Chief Typist	1	Designation and grade of Principal Lady Assistant personal to existing incumbent.
Senior Typist	1	
Typist	4	
General Assistant (Unestablished)	1	
(b) Indian		
Clerk (Grade III)	1	
General Assistant	1	
Assistant	8	
(c) Bantu		
Health Assistant (Grade II)	1	
Watchman	2	
Labourer	1	
EPIDEMIOLOGY, embracing tuberculosis, infectious diseases and venereal diseases control:		
(a) European		
Senior Clinical Medical Officer	2	T.B. Clinics: Dr. P.R. Henson, M.R.C.S., L.R.C.P., D.P.H. Dr. M.L.D. Lowe, M.B., B.Ch., B.A.O. (resigned w.e.f. 15.7.66) 1 Vacancy
X-Ray Technician	1	T.B. Clinics
Operator X-Ray (Male)	1	" " "
General Assistant	2	(1 for Home Disinfection Unit) (1 Immunisation Service)

Section and Position	No.	Incumbent/Remarks
Note: The following staff is posted from the Health Visiting and Health Inspection Sections for full-time duty:		
Tuberculosis Control:		
5 Health Visitors		Field Control
2 Clinic Sisters		T.B. Clinics
1 Health Inspector		Field Control
Infectious Diseases and Venereal Diseases Control:		
1 Senior Health Inspector		
1 Health Visitor		
(b) Indian		
Health Assistant	8	Field Control
Health Assistant	1	T.B. Clinics
Nurse Aid	2	
Interpreter/Cleaner	1	
Labourer	1	Home Disinfection Unit
(c) Bantu		
Health Assistant	16	Field control
Health Assistant	1	T.B. Clinics
Nurse Aid	2	
Interpreter/Cleaner	2	
HEALTH INSPECTION		
(a) European		
Chief Health Inspector	1	Johnston, M.M.
Deputy Chief Health Inspector	1	Clayton, A.
Senior Health Inspector	11	* Ashdown, N.D.
		*+Butler, M.W.
Note: Allocation of Posts:		Clark, A.G.
District Hygiene 6		Crickmore, C.R.A.
Food Hygiene 1		* Green, C.E.O. (w.e.f. 16.3.66)
Housing and Plans 1		Harris, J.K.
Epidemiology 1		Hornby, A.V.
Dairies 1		Ingram, W.A.
Field Hygiene 1		* McIver, E.I.
		Smith, A.M.
Note: All Health Inspection staff hold a certificate recognised in terms of Section 14(2) of the Public Health Act and additional qualifications, as indicated.		* Sutherland, F.T.
* Denotes Meat and Other Foods Certificate + Denotes Tropical Hygiene Certificate		
Health Inspector	41	Alder, C.H.
		*+Behn, A.L.(w.e.f. 29.4.66)
Note: Allocation of positions:		* Benians, P.E.
District and Food Hygiene 34		*+Blair, E.A.
Dairies 3		* Booyens, M.M.
Plans 1		* Brokenshaw, A.D.
Epidemiology 1		* Bruwer, W.F.(w.e.f. 18.4.66)
Slums 2		
41		*+Burgess, D.W.
		*+Butler, J.E.

Section and Position	No.	Incumbent/Remarks
		* Cannon, D.C. *+Currie, A. * Davies, O.S. *+de Villiers, P.D. * Dunbar, A.M.(w.e.f. 18.4.66) * Fick, J.V.(w.e.f. 18.10.66) * Green, C.E.O. to 15.3.66 * Griffin, R.E. *+Hazle, A.D. to 28.11.66 *+Hook, T.C. * Hogan, J.P. *+Hull, V.H. *+Jakins, T.I.N. Resigned 26.5.66 *+Johnston, R.B.(w.e.f. 15.9.66) Keen, F. * Kimber, J.F.(w.e.f. 29.4.66) * Kirk, K.S. (w.e.f. 8.6.66) Resigned 31.12.66. * Knowles, D.H. * Marsh, H.N. *+McCawley, F.G.I. *+Moffitt, N.S. *+Newberry, N. Resigned 24.6.66. *+Ogden, G.B. *+Pearman, E.F.J. * Phillips, L.G.F. *+Roberts, K.W.C. * Roberts, A.J.L. * Schou, M.S. *+Smith, L.J. *+Spencer, D.W. Vorster, J.H. Retired 20.9.66 *+Walsh, W.W. *+Whitaker, D.G.M. * Worthington, C. * Worthington, L.J. Resigned 28.2.66 *+Worthington, R. *+Young, N.R. 2 Vacancies
		Panel of Health Inspectors for emergency meat inspection duties at Municipal Abattoir
		Roberts, K.W.C.; Spencer, D.W.
Health Assistant	12	Trainee Health Inspectors
General Assistant	7	Rodent Control
(b) Indian		
Health Inspector	2	* Hirasen, Velu 1 Vacancy
Health Assistant	3	
Assistant	5	Rodent Control

Section and Position	No.	Incumbent/Remarks
(c) Bantu		
Health Inspector	2	Vacant
Health Assistant	2	
Note: All Health Inspection staff hold a certificate recognised in terms of Section 14(2) of the Public Health Act and additional qualifications, as indicated.		
* Denotes Meat and Other Foods Certificate + Denotes Tropical Hygiene Certificate		
VETERINARY HYGIENE		
European		
Veterinary Medical Officer	1	Dr. A.J. Louw, B.V.Sc.
Laboratory Assistant	2	
FIELD HYGIENE		
(a) European		
Supervisor	1	(Nourse, A.D. to 31.5.66 (Cox, L.J.A. from 19.8.66
Senior General Assistant	1	
General Assistant	8	
(b) Indian		
Overseer	1	
Spotter	2	
Assistant	2	
Labourer	12	
(c) Bantu		
Overseer	1	Vacant
Health Assistant	1	
Spotter	10	
Labourer	84	
HEALTH VISITING		
(a) European		
Chief Health Visitor	1	Eckhoff, E.J., Medical and Surgical, Mothercraft, Health Visitor's and School Nurse's Certificates. Deceased 25.4.66
		Rankin, M.H.E., Medical and Surgical, Midwifery, Mothercraft, Health Visitor's and School Nurse's certificates (w.e.f.28.6.66)
Deputy Chief Health Visitor	1	øxHarding, E., Medical and Surgical, Midwifery, Mothercraft, Health Visitor's and School Nurse's certificates (w.e.f. 6.12.66)
Senior Health Visitor	1	Miss E. Harding, to 15.12.66 Now vacant.

Section and Position	No.	Incumbent/Remarks
		Ø Lloyd, A.A.M.M.
Health Visitor	28	Øx Anderson, E.M.
Note: Allocation of positions:		Ø Baise, L.M.A.(w.e.f. 6.12.66)
Family Health Service 19		Ø Berghammer, A.
Epidemiology:		Øx Brown, M.K.
V.D. and I.D. 1		Ø Butler, M.A.
T.B. Control 5 6		Ø Crossley, Mrs.R.E. (w.e.f. 1.6.66)
Immunisation 3		x Dolkens, S. Resigned 31.8.66
28		Øx Essery, M.V.
		Øx Hamlyn, E.F.
		Hook, E.M.
		Ø Jachimsky, L.M. Resigned 30.4.66
		Øx Laue, H.
		Ø Longmore, F.B.
		Ø Meyerstein, S.M. Retired 28.4.66
		Ø McCagie, Mrs.S.M. (w.e.f.16.5.66)
		Øx Mitchell, B.I.
		Ø Muller, M.
		Ø Pettigrew, E.
		Ø Poulton, M.P.
		Ø Robinson, J.O.
		Ø Schlemmer, P.A.(w.e.f. 1.9.66)
		Øx Schwarz, C.J.P. (w.e.f. 4.10.66)
		Øx Stead, R.J.
		Ø Sutherland, J.W.
		Ø Taylor, J.S.
		Ø Tyzack, P.
		Ø Ward, J.
		Ø Watts, D.J.
		Ø Webb, M.E.
		Ø Whiting, A. Retired 16.8.66
		x Wilde, M.A. Retired 21.11.66
		Ø Wood, O. Resigned 15.6.66
Clinic Sister	7	Ø Baise, L.M.A. from 10.11.66 to 5.12.66
Note: Allocation of positions:		Ø Crossley, R.E. (to 31.5.66)
Family Health Service 3		Ø Hawksworth, S.M.(w.e.f. 2.8.66)
Immunisation 2		Øx Hunter, J.W.
Tuberculosis clinics 2		Ø Martin, M.E.S.(w.e.f. 1.12.66)
7		Ø McCagie, S.M. (to 15.6.66)
		Ø Nickson, M.A.
		Ø Schlemmer, P.A. from 1.4.66 to 31.8.66
		Øx Schwarz, C.J.P. from 8.8.66 to 3.10.66
		Venter, E.G.
		Ø Weston, M.A.
		Ø Wright, M.A. Resigned 11.2.66

Section and Position	No.	Incumbent/Remarks
Clinic Assistant	12	
(b) Coloured		
Health Visitor	2	Ø Deane, D.P.A. Ø Charles, G.T.
Nurse Aid	2	
(c) Indian		
Senior Health Visitor	1	Ø Reddy, R.R.
Health Visitor	6	Ø Manogaran, R.A. Ø Nair, K. Ø Reddy, T. Ø Naidoo, K. (w.e.f. 12.10.66) Ø Jacob, S. (w.e.f. 29.4.66) Ø Papiah, R.F. (w.e.f. 29.4.66)
Nurse	5	Ø Iyer, S. to 28.4.66 Ø Kalyani to 11.10.66 Ø Papiah, R.F. to 28.4.66 Ø Anthony, A. Ø Naidoo, S.P. (w.e.f. 10.8.66) Ø Tholasiamah, (w.e.f. 1.9.66) Ø Naidu, S. (w.e.f.10.8.66) 1 Vacancy
Nurse Aid	18	
General Assistant	1	
Interpreter/Cleaner	6	
(d) Bantu		
Senior Health Visitor	1	Ø Zulu, K.M. (w.e.f. 29.4.66)
Health Visitor	16	Ø Bengu, M. Ø Dotwana, H.B. Ø Kgoare, L. Ø Mkize, L.D. Ø Moholo, D.V. Ø Malamba, M.V. Ø Mlambo, S. Ø Mazibuko, P.A. Ø Mkwanazi, K. Ø Nala, N. Ø Nkabinde, I. Ø Ntaka, E.N. Ø Ngqulunga, O.G. Ø Ndlovana, M.N. Ø Sibiya, F. Ø Tsekiso, A. Ø Zulu, K.M. to 28.4.66
Nurse Aid	10	
Interpreter/Cleaner	6	
IMMUNISATION		
Note: European staff comprising 3 Health Visitors, 2 Clinic Sisters and 2 Clinic Assistants is posted to this Section from the Health Visiting Section on a full-time basis.		

Section and Position	No.	Incumbent/Remarks
Note: The services of part-time Medical Officers, appointed to a panel, are employed on a sessional basis.		
(a) Indian		
Nurse	2	1 Vacancy Ø Shunmugam, M. Ø Baboo, C. Resigned w.e.f. 31.7.66
Health Assistant	4	
Overseer	1	Vacant
(b) Bantu		
Nurse	3	Putini, D. Ø Nyembezi, M. 1 Vacancy
Health Assistant	4	
Ø Denotes Midwifery Certificate x Denotes Mothercraft Certificate		
FAMILY HEALTH (CHILD HYGIENE) SERVICE		
Senior Clinical Medical Officer	1	Dr. H.A.B.Pletts, M.B., B.Ch.
Clinical Medical Officer	1	Dr. E.M. Fisher, M.B., B.Ch., Resigned 31.3.66 Dr. E.Shirley, M.B.,Ch.B., w.e.f.20.6.66 Dr.L.E.J.Chapman, B.Sc., M.B.,B.Ch.,D.P.H.(w.e.f. 30.8.65) Dr. E.K.McDonald, M.B., Ch.B. Dr. M. Ness Dr.W.F.J. Rathgeber (Locum tenens for various periods) 1 Vacancy
Part-time Medical Specialist	1	Dr.L.Raftery, F.R.C.O.G., M.M.S.A., M.R.C.S.,L.R.C.P.
EXFOLIATIVE CYTOLOGY (Prevention of Uterine Cancer)		
(a) European		
Municipal Consultant	1	Prof.Derk Crichton, M.B., Ch.B.,D.Phil.,F.R.C.S., F.R.C.O.G.
Part-time Laboratory Technician	1	
(b) Indian		
Health Assistant	1	
MATERNAL AND FAMILY WELFARE		
(a) European		
Part-time Clinical Medical Officer	1	Dr. P. Kirtle, M.B.,B.S.
(b) Indian		
Nurse	1	Ø Govinder, P., w.e.f. 13.4.66

Section and Position	No.	Incumbent/Remarks
HEALTH EDUCATION		
(a) European		
Health Educator	1	Goddard, Miss E. Retired 3.11.66
Senior Health Inspector (Health Educator)	1	Hazle, A.D., Public Health Inspector's, Meat and Other Foods and Tropical Hygiene Certificates, w.e.f. 29.11.66
Technician	1	Godfrey, D.M.
General Assistant	2	
(b) Coloured		
Lecturer	1	
(c) Indian		
Lecturer	1	
Junior Lecturer	5	
(d) Bantu		
Lecturer	2	
Assistant Lecturer	1	
Junior Lecturer	4	
NON-EUROPEAN HEALTH AND MEDICAL SERVICES		
Venereal Diseases Clinics		
(a) European		
Senior Clinical Medical Officer (City Venereologist)	1	Dr. A.A. Wailer, M.R.C.S., L.R.C.P.
Clinical Medical Officer	2	(Dr. J.H. Meiring, M.B., (Ch.B. (1 Vacancy Dr. H.F. Morton, Locum Tenens w.e.f. 18.10.66.
(b) Bantu		
Medical Officer	1	Dr. C.N. Dhlamini, L.R.C.P., L.R.C.S., L.R.F.P.S. Retired 30.6.66
Nurse	4	Cele, M. Emerson, R. Ø Mangole, B. Ø Nxumalo, V. Ø Denotes Midwifery Certificate
Health Assistant	9	
Interpreter/Cleaner	1	
MEDICAL BUREAU		
Senior Clinical Medical Officer	1	Dr. M. Casson, M.D., M.R.C.S., L.R.C.P.
TOTAL STAFF ESTABLISHMENT		
European	205	(Includes 1 unestablished and 8 part-time appointments)
Non-European	302	
	507	

FINANCIAL SUMMARY

An abbreviated statement of the cost for the services undertaken by the City Health Department for the financial year ended 31st July, 1966, is set out below:-

Expenditure	1965/66	1964/65
Salaries, Wages and Allowances	R702,272	R638,666
Drugs and Medical Requisites	10,006	15,598
Tuberculosis Hospitalisation -		
Government Hospitals: Net Cost	32,702	37,481
Other Hospitals : Gross Cost	200,495	167,903
Hospitalisation of Infectious Diseases including Venereal Diseases	32,908	33,710
Transport and Subsidised Locomotion	47,245	45,205
Miscellaneous, including Electricity, Insurance, Rents, Stationery, Telephones	225,830	202,430
	R1,251,458	R1,140,993

Income				
General, including hospital fees recovered	R37,454;	R42,436		
Government refunds under Public Health Act	R428,602;	R377,524		
Health Services debited to Bantu Hostels and Locations	R98,745	R99,171	R564,801	R519,131
		Nett Cost	R686,657	R621,862

Capital Expenditure is not included in the above statement.

R E P O R T "B"

HOUSING

1. POPULATION

The estimated population of the City of Durban as at the 31st December 1966 was as follows:-

Europeans	181,596	- 27.12%
Coloureds	29,840	- 4.46%
Indians	257,107	- 38.40%
Bantu	201,023	- 30.02%

2. EUROPEAN HOUSING

According to reports received by this Department there is an ever growing demand for accommodation in all sections of Municipal Assisted Housing. The City Treasurer, who allocates and controls the letting of Council owned or sponsored houses and flats, has advised that at the 31st December, 1966, the numbers of pending applications on hand were as follows:-

Purchasing schemes	- 1,756
Letting schemes	- 934

The City Treasurer further advised that units of accommodation completed under the Council's Housing Schemes during the 1966 calendar year, were as follows :-

Loan and Selling Schemes, Private Powers		-	19
Selling Scheme - Woodlands		-	109
Economic Letting Schemes - Bluff	- 97		
Easton Road	- 85	-	182
Total European units		-	310

From the above it will be seen that the demand for housing far outstrips the supply and it is evident that despite the increased tempo in construction of houses for Europeans in the past few years, there has been no apparent falling off in the demand. Although land available at present is at a premium, substantial progress has been maintained and the development of the Woodlands area is now almost complete. It is expected that the land position will be eased in the near future when the Hillary, Westlands (Cato Manor), Wiggins Estate and Riverside areas become available for development.

Apart from the City Council's contribution in respect of houses and flats, the Department of Community Development also played its part in the provision of housing units. Unfortunately, the number of houses and flats completed, and the number of applications on hand, are not available for inclusion in this report.

The Regional Representative of the Department of Immigration was requested to comment on the number of immigrants arriving in Durban and the impact that they may have had on the housing position. The reply was to the effect that, during the year 1966, 3,680 immigrants arrived in Durban, 2,942 by sea, 459 by train, 183 by air and 36 by road. Of these approximately 60% (2,172) left Durban within a few days for centres outside Natal after being provided with transit accommodation in various hotels. The balance of 1,448 immigrants either remained in Durban or settled

somewhere in Natal, also after periods of accommodation in hotels varying from one week to two months. It is unfortunate that the exact number of families who remained in Durban is not known. However, it is reasonable to assume that these families did influence the housing position.

This report would be incomplete without reference to the demolition of dwellings in order to make way for essential road development. A major road undertaking known as the Western Freeway will follow the route of Old Dutch Road and up Berea Road to Toll Gate. At this juncture according to information supplied by the City Valuator and Estates Manager 70 dwellings, 14 blocks of flats, 2 boarding houses and 14 businesses (shops, etc.) were demolished in connection with this project. A total of 172 families were accommodated in the buildings concerned. The displaced persons were all offered alternative accommodation but the majority of the Europeans involved found their own accommodation.

3. COLOURED COMMUNITY

The Coloured community comprises the smallest race group within the City, representing 4.46% of the estimated population. This figure shows a very slight increase as compared with 1965 (4.42%) but may not be as accurate as one would desire as no allowance has been made for persons coming from other parts of the Republic. The three areas subject to a Group Areas Act proclamation have remained unchanged during the past year and this group's housing requirements still present a serious problem.

According to details provided by the City Treasurer the number of applications on hand as at the 31st December 1966 was as follows :-

Purchasing schemes	-	1,085
Letting schemes	-	531

These applications reflect an increase of 321 as compared with 1965.

Units of accommodation completed during the current year amounted to :-

Loan scheme private powers	-	6
Economic selling scheme	-	113
Total units	-	119

Here again the demand is far greater than the supply. An economic housing scheme comprising 195 semi-detached double-storey houses is under construction at Merebank/Wentworth and is due for completion early in 1967. At Sparks Estate an economic scheme for 88 houses has been approved by the Government although at present no funds are available. The construction of a block of 48 sub-economic flats in the same area is well advanced, it being expected that this latter scheme will be completed early in 1967. Particulars of the Coloured housing projects carried out by the Department of Community Development are not available.

Regarding the dwellings which were demolished in order to make way for the construction of the Western Freeway only a small number of Coloured families were involved and these either found their own accommodation or were offered alternative housing.

4. INDIAN HOUSING

The Indian community is the largest single race group within the City and now comprises 38.40% of the total estimated population.

The City Council has continued to play a major part in providing housing facilities for this group. In spite of its accomplishments, however, the demand for housing continues to escalate. This is supported by the following details provided by the City Treasurer in that the number of applications on record as at the 31st December 1966 was as follows:-

Purchasing schemes	-	9,058
Letting schemes	-	2,218

On the other hand, completed dwelling units as at the 31st December 1966 were as follows:-

Loan scheme Private Powers	-	127
Economic Letting Schemes with Option to Purchase	-	1,339
Sub-economic Letting Scheme	-	994
Total dwelling units	-	2,460

Work is progressing steadily on the construction of 2,946 economic units, with the option of purchase, and a further 4,966 units of the same type have been approved but deferred due to a shortage of funds.

Regarding essential and long awaited major road development, the Western Freeway affected 147 families and the Southern Freeway, which runs roughly parallel to the main South Coast Road and traverses the densely populated Indian area of Clairwood, resulted in the demolition of 91 dwellings and 71 dilapidated shacks. This involved the displacement of 520 families, the bulk of whom were Indians. A few of the Indian families found their own accommodation and the balance were rehoused in other Corporation owned properties or were allotted accommodation at Chatsworth.

Chatsworth Indian Township is the major housing development presently being undertaken by the Durban City Council and its origins and progress are dealt with more fully in appendix "D".

5. HOUSING UNITS COMPLETED

Tabulated hereunder is a summary reflecting the units of accommodation for the various racial groups completed in the City Council's housing schemes during the 1966 calendar year:-

Race Group	Loan and Selling Scheme Private Powers	Selling Scheme Woodlands	Economic Letting and Selling Scheme	Sub-Economic Letting Scheme	Total
European	19	109	182	-	310
Coloured	6	-	113	-	119
Indian	127	-	1,339	994	2,460
Total	152	109	1,634	994	2,889

Grand Total : 2,889 units of accommodation.

6. HOUSING APPLICATIONS OUTSTANDING

A summary of the number of applications recorded in the Housing Section of the City Treasurer's Department as at the 31st December, 1966, is as follows:-

Racial Group	Purchasing Schemes	Letting Schemes	Total
European	1,756	934	2,690
Coloured	1,085	531	1,616
Indian	9,058	2,218	11,276
Totals	11,899	3,683	15,582

Grand Total : 15,582 housing units outstanding.

7. BANTU HOUSING

The City Engineer has advised that the 2,500 temporary timber huts which were erected as an emergency measure in Neighbourhood Units 2 and 4 in kwaMashu in 1961 were demolished progressively throughout the year as permanent housing became available for the occupants. Whilst these huts undoubtedly served a useful purpose in accelerating the clearance of shacks at Cato Manor, from a public health viewpoint their removal and replacement by permanent brick houses was welcomed. In this scheme it is of interest to record that building development continued at the rate of five houses per day throughout the year and that eleven of the twelve neighbourhood units comprising the Township are now virtually complete.

To the south of and outside the City, the development work in the Umlazi Bantu Township is in the hands of the City Engineer, acting as agent of the South African Bantu Trust. This project is substantial and is expected to be even larger than kwaMashu. It will comprise 22,000 houses divided into 18 neighbourhood units on some 7,500 acres of land. So far 10,249 houses and 1,416 wooden huts have been built. A railway line which will pass through the Township is being surveyed and, when commissioned, this facility will offer rapid transport and will to a large extent supplement the bus services presently in use.

Summary of Bantu Housing

(a) Municipal Locations/Townships

	No. of Houses	Estimated Population
1. Chesterville	1,265	9,300
2. Lamont (Sub-economic)	1,911)	
3. Lamont Extension (Economic)	851)	20,700
4. Umlazi Glebe	747	5,000
5. kwaMashu	13,605	92,600
	18,379	127,600

(b) Municipal Hostels and Dormitories

1. Dalton Road	- Males	Beds	1,451
2. Grey Street	- Females	"	687
3. Jacobs	- Females	"	15
4. Jacobs	- Males	"	846
5. S.J. Smith	- Males	"	4,602
6. kwaMashu	- Males	"	15,184
			22,785

The estimated total number of Bantu housed by the Durban Municipality was 150,385. The remainder of the population was housed on residential premises, in the case of domestic servants, on licensed premises (under the Bantu (Urban Areas) Consolidation Act), and in compounds owned by the State, Railways and Provincial Administration etc. A summary of essential information in respect of the locations forms an annexure to this report.

8. SLUM CLEARANCE PROGRAMME

This phase of the Department's activities commenced in the second half of 1965. Due to staff shortages and other factors at that stage, only a limited number of properties received attention. Early in 1966, however, the staff position was improved as a health inspector was specially allocated to slum clearance work, to be followed a few months later by a second slums inspector.

During 1966, 190 properties were surveyed for presentation to the Slum Clearance Court bringing the total number processed from inception up to 262 premises involving 370 units. European families occupied 50 of these premises, Coloureds 29, Indians 170, Bantu 7 and mixed races 6, totalling 829 families comprising 4,335 persons in all. It will readily be appreciated that the large number of families involved presented a serious rehousing problem, especially as the majority of the occupants fell within the sub-economic group and, in some cases, were classified for the want of a better description, as lower sub-economic.

In the course of the year the Slum Clearance Court sat on 49 occasions, during which 87 properties were declared slums, bringing the overall total of slum declarations up to 118. The Court ordered complete demolition in 99 cases, partial demolition and repair in 12 cases and extensive repairs and renovations in respect of the remaining 7 properties. Of the orders so made, 29 demolitions were undertaken by the owners and, in the case of 2 other properties, partial demolition with the necessary repairs and renovations were carried out. Following upon compliance with the Slum Clearance Court's orders, 17 rescissions were granted.

It is of interest to record that five appeals against the decision of the Court were made to the Minister, all of which were disallowed.

On being warned that the Department was contemplating applying the provisions of the Slums Act the owners of 37 premises carried out demolition and in five other cases carried out extensive repairs and renovations voluntarily. Three property owners were prosecuted for failing to carry out the Court's orders.

A number of cases submitted to the Slum Clearance Court were not brought to finality as adjournments were granted for various reasons such as the desire on the part of an owner to obtain estimates of costs of repairs and renovations or, in the event of a pending sale, to permit both buyer and seller being made aware of the proposed action in respect of the property. In other cases the Court deferred consideration where applications had been made for permits to demolish in terms of the Housing Act - certain of these applications are awaiting the attention of the Housing Board.

The continued progress in slum clearance in Durban depends to a large extent on the availability of alternative housing for the persons occupying affected properties.

9. REHOUSING OF SLUM DWELLERS

One of the main factors influencing the tempo of slum clearance is the availability of alternate accommodation. Not only is it desirable that adequate and suitable rehousing be readily attainable but there is a legal obligation on a local authority to ensure the provision of suitable housing generally and as far as circumstances permit. Likewise the Department of Community Development, through the Slum Clearance Court, must unavoidably be guided by the current housing demands and ensure that inhabitants are not rendered homeless following orders in terms of the Slums Act.

Both the State and the local authority in Durban are actively engaged in providing housing for the various races but not primarily with the intention of re-accommodating slum occupants, nor is specific provision created for the persons affected. Although every effort is made by the housing authorities to accommodate displaced occupiers and all these persons are afforded priority in their applications for housing the needs are deficient in respect of certain races and "disqualified" classes of slum tenants. This shortage is encountered particularly in regard to the Coloured group and the lower sub-economic categories of all race groups other than Bantu.

Although housing for the Coloured group is in the course of construction the limited number of units becoming available could be more than fully taken up by applicants already listed. Many families are known to be living under slum conditions and in one particular 'slum' property alone 21 families of this group are known to be in need of re-accommodation and there are other premises where similar conditions exist, albeit to a lesser degree.

The problem of what to do with the lower sub-economic classes, however, is more acute. At the present juncture no provision is made for those slum occupants who do not qualify for economic or sub-economic accommodation. In fact there appears to be no clear demarcation of responsibility for this class between the State or the local authority. Slum clearance experience to date indicates that many non-Europeans fall into this category and in the absence of transit accommodation, work colonies or similar institutions little can be achieved. If anything, there is a tendency for this class to migrate to other unsuitable accommodation when there is any suggestion of official slum clearance. What renders the task more difficult in catering for the needs of the lower sub-economic occupiers is the lack of adequate socio-economic surveys of "blighted" areas or on-site investigations into individual financial circumstances. The State Departments concerned are apparently inadequately equipped to tackle this service and the local authority does not employ experienced social welfare workers. The result is that health inspectors are perforce endeavouring, in the course of their other responsibilities, to make cursory individual examinations without any particular training or guidance in this field.

No machinery is therefore available to undertake the full range of investigation and assistance necessary for the rehabilitation of slum dwellers who, in a

majority of cases, usually tend to develop a slum outlook. Three main types are encountered, viz:-

(i) those who with a little assistance will be able adequately to rehabilitate themselves and acquire suitable alternative accommodation;

(ii) those who will require to be rehabilitated by education and a much greater degree of aid involving possibly financial assistance, and/or help in securing employment; and

(iii) those who even with encouragement and subsidisation will not be able to emerge from a slum mentality morass and will require treatment for alcoholism or mental deficiencies, institutional training, sheltered employment, or re-accommodation in a work colony and finally lower sub-economic housing.

The constant availability of trained social welfare services and adequate lower sub-economic housing appear to be essential for effective slum clearance, and these factors may well influence the successful implementation of future programmes in many areas.

10. URBAN RENEWAL

A matter giving rise to concern is the problem of deciding to what degree, if any, a health authority and the legislation it administers should be involved in major schemes of urban renewal. Whilst urban renewal can play a major role in slum clearance not all so-called "blighted" areas comprise predominantly sub-standard housing. During the year a proposal was made that Block AK, a large area of the City in Greyville bounded by Mitchell, Windermere, Argyle, Umgeni and Epsom Roads, should be replanned and redeveloped under the powers contained in the Slums Act. Although a number of premises in May Street, which lies within the boundaries of this complex, had formed the subject of complaint from the Department of Community Development it was established that only approximately 20% of the buildings in this thoroughfare could reasonably be dealt with in terms of the Act and far less in the remainder of the Block. This Department was therefore of opinion that whilst urban renewal could probably be justified on considerations other than public health it could not lend support to the view that it should motivate and actively prosecute a scheme where many premises were not dwellings, and of the habitable buildings which did exist, a large number although not of modern vintage, had nevertheless not yet reached a stage of deterioration justifying Slums Act proceedings.

In fact the demand for the urban renewal of many areas could better be supported on other considerations some of which are set out below, not necessarily in their order of importance:-

(a) the changing character of neighbouring areas which accentuate certain premises from an aesthetic viewpoint;

(b) the need for open spaces and public amenities;

(c) the need to improve road networks to provide for the free flow of local and through traffic;

(d) Group areas zoning;

(e) piecemeal development by private enterprise;

(f) a desire to shift residential districts closer to employment centres or to remove a juxtaposition to industrial areas;

(g) considerations suggesting the desirability of regional replanning of urban boundary districts which lie contiguous to areas under the jurisdiction of neighbouring urban or rural authorities and which may be affected by local developments;

(h) modern concepts of town planning underline the need to redesign certain areas although, structurally, many premises therein are not necessarily sub-standard from a public health viewpoint.

On review of the implications, the conclusion is reached that urban renewal in its wider concepts ranges far beyond the intention or scope of the Slums Act and whilst any scheme of redevelopment or replanning is worthy of support by the health authority if the area constitutes a material measure of low-standard housing, nevertheless the implementation and execution of large-scale programmes of this nature cannot be justified on purely public health grounds.

11. DEMOLITIONS AND CONVERSIONS

Applications to the City Council for the Minister's consent to demolish or convert premises in terms of the Housing Act numbered 206. At the time of application 126 of these houses were occupied or owned by Europeans, 75 by Indians and 5 by Coloureds. Investigations disclosed that 94 properties were actually occupied by tenants, in which case departmental recommendations were conditional upon the suitable re-accommodation of the tenants concerned. Of the remainder, 68 premises were vacant and 44 were owner/occupied. These applications for permission to demolish or convert were made with the undermentioned projects in view :-

Flat development	66
Commercial usage	49
Industrial purposes	37
New development (bulk being slum properties)	23
Rebuilding in brick	19
Hotel development or extension	4
Religious purposes	2
Rebuilding as maisonettes	1
Parking facilities	1
Educational purposes	1
Medical Centre	1
Mental Home	1
Clinic/Nursing Home	1
Total	206

12. BUILDING PLANS

A total of 3,115 building plans relating to dwellings, flats and other residential accommodation were submitted to this Department for examination during the year. The total cost of the buildings involved was assessed at R17,462,879.

Type of Dwelling	No. of Plans	No. of Units	Estimate of Costs
Private Dwellings			
1 and 2 rooms	4	30	
3 rooms	57	57	
4 rooms	350	550	
5 rooms	274	274	
6 rooms and over	224	224	
Total new dwellings	909	1,135	R8,030,027
New Flats			
1 room		179	
2 rooms		668	
3 rooms		465	
4 rooms and over		59	
Total	54	1,371	R5,242,100
Total dwelling units	963	2,506	R13,272,127
Other residential	8		1,507,000
Additions to residential	2,144		2,683,752
Grand Total	3,115	2,506	R17,462,879

ANNEXURE TO REPORT "B"

SUMMARY OF ESSENTIAL INFORMATION RELATING TO LOCATIONS ETC.

Location or Township	Year Completed	Houses		Water Supply	Sanitation	Ablutions	Remarks
		Economic	Sub-Economic				
Chesterville	1946	-	1,265	Individually piped	Water-borne	Showers to	Mother and Baby Clinic twice weekly
Lamont	Virtually completed	-	1,911	-do-	-do-	Showers to each house plus	Mother and Baby Clinic daily. Tuberculosis Clinic once weekly.
Lamont	-do-	851	-	-do-	-do-	178 communal washing gullies	-do-
Umlazi Glebe	-do-	10	737	Communal standpipes	Pit and Aqua privies	Communal shower houses	Mother and Baby Clinic twice weekly
kwaMashu	Still being developed	13,605		Piped individually	Water-borne	Showers to each house	Mother and Baby Clinic daily. Two clinics established. Tuberculosis Clinic daily, Venereal Diseases Clinic once weekly.

Chesterville Location is provided throughout with electrical power as are all hostels and dormitories. Electrical power is available in all other locations and townships. A number of residents have taken advantage of this amenity. The Clinics are conducted by the Durban City Health Department.

CAUSES OF DEATH

APPENDIX "A"

CLASSIFIED ACCORDING TO INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES FROM SEVENTH REVISION, WORLD HEALTH ORGANISATION 1948

Ref.	Cause of Death	Detailed List Number	European				Coloured				Bantu				Asiatic				Total			
			M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965
A1	Tuberculosis of Respiratory System	001-008	7	4	11	12	7	3	10	16	41	16	57	115	11	8	19	29	66	31	97	172
A2	Tuberculosis of Meninges and Central Nervous System	010				1	2		2		5	3	8	20	2		2	4	9	3	12	25
A3	Tuberculosis of Intestines, Peritoneum and Mesenteric Glands	011								1		3	3	1				1		3	3	3
A4	Tuberculosis of Bones and Joints	012, 013	1		1		1		1										2		2	
A5	Tuberculosis, All Other Forms	014-019					1	1	2		12	6	18	18	3		3	2	16	7	23	20
A6	Congenital Syphilis	020												3								3
A7	Early Syphilis	021																				
A9	General Paralysis of Insane	025																				
A10	All Other Syphilis	022, 023, 026-029																				
A11	Gonococcal Infection	030-035																				
A12	Typhoid Fever	040									3		3			1	1		3	1	4	
A13	Paratyphoid Fever and Other Salmonella Infections	041, 042									1		1						1		1	
A14	Cholera	043																				
A15	Brucellosis (Undulant Fever)	044																				
A16	Dysentery, All Forms	045-048		1	1	3	1		1	2	13	4	17	28				4	14	5	19	37
A17	Scarlet Fever	050																				
A18	Streptococcal Sore Throat	051	1		1														1		1	
A19	Erysipelas	052																				
A20	Septicaemia and Pyaemia	053	2		2	3		1	1	1	1	2	3	6	2		2	1	5	3	8	11
A21	Diphtheria	055					1		1		1	2	3	2	3	3	6		5	5	10	2
A22	Whooping Cough	056		1	1															1	1	
A23	Meningococcal Infections	057				1	1		1	1		1	1	2		1	1		1	2	3	4
A25	Leprosy	060																				
A26	Tetanus	061								1	6	5	11	2	1	1	2	1	7	6	13	4
A28	Acute Poliomyelitis	080																				
A29	Acute Infectious Encephalitis	082									2	1	3	1		1	1	1	2	2	4	2
A31	Smallpox	084																				
A32	Measles	085				1	5	1	6	2	29	20	49	45	18	20	38	23	52	41	93	71
A34	Infectious Hepatitis	092		2	2	2				1	1	2	3		1	2	3		2	6	8	3
A38	Schistosomiasis	123																				
A42	Other Diseases Due To Helminths	124, 126, 128, 130									1		1					1	1		1	1
A43	All Other Diseases Classified as Infective and Parasitic	036-039, 049, 054, 059, 063-074, 086-090, 093, 095, 096, 120-122, 131-138				1				1	1		1		1	1	2	1	2	1	3	3
A44	Malignant Neoplasm of Bucçal Cavity and Pharynx	140-148	7	3	10	9	2		2		1	1	2		2	3	5	1	12	7	19	10
A45	Malignant Neoplasm of Oesophagus	150	7	4	11	12	2		2	4	17	2	19	30	2	5	7	5	28	11	39	51
A46	Malignant Neoplasm of Stomach	151	21	6	27	36		1	1	1	3	2	5	4	9	11	20	11	33	20	53	52
A47	Malignant Neoplasm of Intestine Except Rectum	152, 153	5	13	18	23	1		1	1	1		1	1	1		1	3	8	13	21	28
A48	Malignant Neoplasm of Rectum	154	5	4	9	5					1		1	1	1	3	4	3	7	7	14	9

Ref.	Cause of Death	Detailed List Number	European				Coloured				Bantu				Asiatic				Total			
			M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965
A49	Malignant Neoplasm of Larynx	161	6	2	8	4					2		2	1		1	1	1	8	3	11	6
A50	Malignant Neoplasm of Trachea, Bronchus and Lung, Not Specified as Secondary	162, 163, 166	68	14	82	69	4	1	5	4	23	4	27	16	12	1	13	6	107	20	127	95
A51	Malignant Neoplasm of Breast	170		27	27	35		2	2	3		2	2	4		2	2	9		33	33	51
A52	Malignant Neoplasm of Cervix Uteri	171		9	9	4		3	3	1		18	18	13		6	6	3		36	36	21
A53	Malignant Neoplasm of Other and Unspecified Parts of Uterus	172-174		5	5	1		2	2	2		3	3	2		5	5	2		15	15	7
A54	Malignant Neoplasm of Prostate	177	6		6	16	1		1	1	2		2	4	1		1	2	10		10	23
A55	Malignant Neoplasm of Skin	190, 191	2	1	3	5								2	1	1	2		3	2	5	7
A56	Malignant Neoplasm of Bone and Connective Tissue	196, 197		3	3	3		1	1		1		1		2		2		3	4	7	3
A57	Malignant Neoplasm of All Other and Unspecified Sites	155-160, 164, 165, 175, 176, 178-181, 192-195, 198, 199	39	37	76	75	4	4	8	3	28	10	38	28	8	13	21	24	79	64	143	130
A58	Leukaemia and Aleukaemia	204	7	1	8	12					4	3	7	4	7	3	10	8	18	7	25	24
A59	Lymphosarcoma and Other Neoplasms of Lymphatic and Haematopoietic System	200-203, 205	4	9	13	5				3	2		2	1	3	1	4	4	9	10	19	13
A60	Benign Neoplasm and Neoplasms of Unspecified Nature	210-239		1	1	11	1	1	2		1	1	2	3	1		1	1	3	3	6	15
A63	Diabetes Mellitus	260	2	8	10	11		4	4		1	8	9	11	8	10	18	21	11	30	41	43
A64	Avitaminosis and Other Deficiency States	279-286					1	1	2	2	11	14	25	74	1	2	3	4	13	17	30	80
A65	Anaemias	290-293	2	3	5	3	1	2	3			2	2	3				4	3	7	10	10
A66	Allergic Disorders; All Other Endocrine, Metabolic and Blood Diseases	240-245, 253, 254, 270-277, 287-289, 294-299	5	3	8	16				4	2	1	3	10	15	15	30	27	22	19	41	57
A68	Psychoneuroses and Disorders of Personality	310-324, 326									1		1					1	1		1	1
A70	Vascular Lesions Affecting Central Nervous System	330-334	86	98	184	194	7	9	16	17	28	27	55	78	110	76	186	180	231	210	441	469
A71	Non-meningococcal Meningitis	340	2	2	4	1	2		2	5	15	16	31	30	10	8	18	17	29	26	55	53
A72	Multiple Sclerosis	345		1	1													1		1	1	1
A73	Epilepsy	353	1	1	2	2					2	1	3	2		1	1		3	3	6	4
A77	Otitis Media and Mastoiditis	391-393														1	1	1		1	1	1
A78	All Other Diseases of the Nervous System and Sense Organs	341-344, 350-352, 354-369, 380-384, 386, 388-390, 394-398	6	3	9	11		2	2	2	11	5	16	10	5	4	9	10	22	14	36	33
A79	Rheumatic Fever	400-402	1	1	2	1								2	1	1	2	2	2	2	4	5
A80	Chronic Rheumatic Heart Disease	410-416	1	1	2	6					4	3	7	8	3	5	8	10	8	9	17	24
A81	Arteriosclerotic and Degenerative Heart Disease	420-422	261	154	415	438	9	9	18	13	16	10	26	12	128	71	199	180	414	244	658	643
A82	Other Diseases of Heart	430-434	64	64	128	120	5	8	13	10	35	27	62	47	73	48	121	98	177	147	324	275
A83	Hypertension with Heart Disease	440-443	15	21	36	29	3	3	6	4	6	6	12	16	46	39	85	73	70	69	139	122
A84	Hypertension without Mention of Heart	444-447	3	3	6	2	2		2	4	7	2	9	5	4	9	13	7	16	14	30	18
A85	Diseases of Arteries	450-456	24	16	40	38	1	1	2	2	5		5	10	1		1	4	31	17	48	54
A86	Other Diseases of Circulatory System	460-468	18	19	37	34					8	6	14	16	3	2	5	5	29	27	56	55
A87	Acute Upper Respiratory Infections	470-475													1		1	1	1		1	1
A88	Influenza	480-483	1	1	2	2					1	1	2		5	6	11	9	7	8	15	11
A89	Lobar Pneumonia	490	15	10	25	23	4	4	8	7	26	9	35	49	11	9	20	23	56	32	88	102
A90	Bronchopneumonia	491	67	56	123	151	18	9	27	28	97	81	178	199	150	107	257	232	332	253	585	610
A91	Primary Atypical, Other, and Unspecified Pneumonia	492, 493	1		1	3	1	1	2		5	7	12	13	8	6	14	13	15	14	29	29

Ref.	Cause of Death	Detailed List Number	European				Coloured				Bantu				Asiatic				Total			
			M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965
A92	Acute Bronchitis	500				2				1		2	2		2	1	3	12	2	3	5	15
A93	Bronchitis, Chronic and Unqualified	501, 502	14	4	18	15				2	2	3	5	9	13	2	15	14	29	9	38	40
A95	Empyema and Abscess of Lung	518, 521	3	1	4	1					6	1	7	14	1	1	2	1	10	3	13	16
A96	Pleurisy	519												1								1
A97	All Other Respiratory Diseases	503, 511-517, 520, 522-528	24	29	53	45	5	2	7	3	14	5	19	21	5	11	16	28	48	47	95	97
A99	Ulcer of Stomach	540		1	1	6				1		1	1		3		3	2	3	2	5	9
A100	Ulcer of Duodenum	541	1		1	2								1				2	1		1	5
A102	Appendicitis	550-553	1	2	3									1				1	1	2	3	2
A103	Intestinal Obstruction and Hernia	560, 561, 570	2	1	3	7	1		1		2		2	2	2	1	3	4	7	2	9	13
A104	Gastro-Enteritis and Colitis Except Diarrhoea of the Newborn	571, 572	7	4	11	15	3	5	8	14	101	128	229	275	53	50	103	140	164	187	351	444
A105	Cirrhosis of Liver	581	9	2	11	18	1	3	4	1	14	10	24	26	11	6	17	16	35	21	56	61
A106	Cholelithiasis and Cholecystitis	584, 585				1						1	1	1						1	1	2
A107	Other Diseases of Digestive System	536-539, 542, 544,545 573-580, 582, 583, 586, 587	10	9	19	20	3	1	4	5	22	19	41	25	11	7	18	13	46	36	82	63
A108	Acute Nephritis	590				1									1		1	2	1		1	3
A109	Chronic, Other, and Unspecified Nephritis	591-594	2	1	3	14				1	6		6	10	20	17	37	18	28	18	46	43
A110	Infections of Kidney	600				12				2	5	3	8	8	8	14	22	7	13	17	30	29
A111	Calculi of Urinary System	602, 604				1																1
A112	Hyperplasia of Prostate	610				2				1					3		3	2	3		3	5
A114	Other Diseases of Genito-Urinary System	601, 603, 605-609, 611-617, 622-637				1						2	2	2		1	1	2		3	3	5
A115	Sepsis of Pregnancy, Childbirth and the Puerperium	640,641, 681,682,684		1	1			1	1			1	1	1				1		3	3	2
A116	Toxaemias of Pregnancy and Childbirth	642, 652, 685, 686		1	1					2		3	3	2				1		4	4	5
A117	Haemorrhage of Pregnancy and Childbirth	643, 644, 670-672				1						1	1	1				3		1	1	5
A118	Abortion Without Mention of Sepsis or Toxaemia	650								1		3	3	1		1	1	1		4	4	3
A119	Abortion With Sepsis	651		1	1	2						3	3	11		1	1	3		5	5	16
A120	Other Complications of Pregnancy, Childbirth, and the Puerperium	645-649, 660, 673-680, 683, 687-689										1	1	2						1	1	2
A121	Infections of Skin and Subcutaneous Tissue	690-698										3	3	3				1		3	3	4
A122	Arthritis and Spondylitis	720-725		2	2	2														2	2	2
A124	Osteomyelitis-Periostitis	730				1								1								2
A126	All Other Diseases of Skin and Musculoskeletal System	700-716, 731-736, 738-744		3	3			1	1					1	1	1	2		1	5	6	1
A127	Spina Bifida and Meningocele	751										1	1	2				3		1	1	5
A128	Congenital Malformations of Circulatory System	754	4	4	8	6		2	2	1		3	3	5	3	3	6	11	7	12	19	23
A129	All Other Congenital Malformations	750,752,753,755-759	3	2	5	5	1		1		5	2	7	12	5	1	6	12	14	5	19	29
A130	Birth Injuries	760, 761	4	1	5	2		1	1	1	13	16	29	28	11	10	21	11	28	28	56	42
A131	Postnatal Asphyxia and Atelectasis	762	6	2	8	5	2	1	3	6	20	11	31	32	6	2	8	15	34	16	50	58
A132	Infections of the Newborn	763-768	5		5	3	2		2	2	33	18	51	40	23	14	37	38	63	32	95	83
A133	Haemolytic Disease of the Newborn	770	1		1	2		1	1	2				1	1	1	2	1	2	2	4	6

Ref.	Cause of Death	Detailed List Number	European				Coloured				Bantu				Asiatic				Total			
			M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965
A134	All Other Defined Diseases of Early Infancy	769, 771, 772				1					7	5	12	19		2	2	3	7	7	14	23
A135	Ill-Defined Diseases Peculiar to Early Infancy, and Immaturity Unqualified	773-776	19	15	34	31	5	9	14	14	80	94	174	171	47	42	89	115	151	160	311	331
A136	Senility Without Mention of Psychosis	794	3	8	11	18				2				2	2		2	4	5	8	13	26
A137	Ill-Defined and Unknown Causes of Morbidity and Mortality	780-793, 795, 796	60	54	114	108	23	31	54	35	415	313	728	711	126	71	197	137	624	469	1093	991
AE138	Motor Vehicle Accidents	E810-E835	22	14	36	41	12	3	15	12	58	20	78	74	36	9	45	51	128	46	174	178
AE139	Other Transport Accidents	E800-E802, E840-E866	1		1	2	1		1		14	1	15	105	3		3	3	19	2	21	110
AE140	Accidental Poisoning	E870-E896		1	1		1		1		4	3	7	7	2	3	5	1	7	6	13	8
AE141	Accidental Falls	E900-E904	7		7	5	1		1	1	14		14	12	5	3	8	7	27	3	30	25
AE142	Accident Caused by Machinery	E912	1		1	1					1		1						2		2	1
AE143	Accident Caused by Fire and Explosion of Combustible Material	E916	2	1	3			1	1	2	2	4	6	4		11	11	5	4	17	21	11
AE144	Accident Caused by Hot Substance, Corrosive Liquid, Steam and Radiation	E917, E918		1	1	2					2	1	3	7				3	2	2	4	12
AE145	Accident Caused by Firearm	E919				1					1		1						1		1	1
AE146	Accidental Drowning and Submersion	E929	6		6	5	3		3	3	10	1	11	15	12	5	17	12	31	6	37	35
AE147	All Other Accidental Causes	E910, E911, E913-E915, E920-E928, E930-E962	6	2	8	11	2	2	4	8	27	7	34	56	10	5	15	19	45	16	61	94
AE148	Suicide and Self-Inflicted Injury	E963, E969-E979	13	12	25	26	4	1	5	6	5	5	10	10	14	16	30	21	36	34	70	63
AE149	Homicide and Injury Purposely Inflicted By Other Persons (Not In War)	E964, E980-E985	8		8	8	3		3	6	92	7	99	86	11	1	12	12	114	8	122	112
		Totals	1007	791	1798	1886	161	139	300	282	1459	1039	2498	2770	1126	826	1952	1832	3753	2795	6548	6770
		Crude Death Rates	9.90		(10.57)		10.05		(9.72)		12.43		(13.93)		7.59		(7.31)		9.78		(10.32)	

APPENDIX "B"

CAUSES OF DEATH IN RESPECT OF INFANTS (UNDER 1 YEAR)

CLASSIFIED ACCORDING TO INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES FROM SEVENTH REVISION, WORLD HEALTH ORGANISATION 1948

Ref.	Cause of Death	Detailed List Number	European				Coloured				Bantu				Asiatic				Total			
			M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965
A1	Tuberculosis of Respiratory System	001-008									2		2	4					2		2	4
A2	Tuberculosis of Meninges and Central Nervous System	010					1		1		1		1	5				2	2		2	7
A5	Tuberculosis, All other forms	014-019									2	2	4	3	1		1	1	3	2	5	4
A12	Typhoid	040														1	1			1	1	
A13	Paratyphoid Fever and Other Salmonella Infections	041-042									1		1						1		1	
A16	Dysentery, All forms	045-048									3	1	4	9				2	3	1	4	11
A20	Septicaemia and Pyaemia	053									1		1						1		1	
A23	Meningococcal Infections	057														1	1			1	1	
A26	Tetanus	061									4	4	8	2		1	1	1	4	5	9	3
A29	Acute Infectious Encephalitis	082									2		2						2		2	
A32	Measles	085					1	1	2	1	15	7	22	31	4	3	7	3	20	11	31	35
A43	All other Diseases classified as Infective or Parasitic	036-039, 049, 054, 059 063-074, 086-090, 093, 095, 096, 120-122, 131-138													1	1	2		1	1	2	
A57	Malignant Neoplasm of all Other and Unspecified Sites	155-160, 164, 165, 175, 176, 178-181, 192-195, 198, 199																1				1
A58	Leukaemia and Aleukaemia	204													1		1		1		1	
A64	Avitaminosis and Other Deficiency States	279-286									2		2	14					2		2	14
A65	Anaemias	290-293										1	1	1						1	1	1
A66	Allergic Disorders: All Other Endocrine, Metabolic and Blood Diseases	240-245, 253, 254, 270-277, 287-289, 294-299										1	1	1				2		1	1	3
A70	Vascular Lesions Affecting Central Nervous System	330-334									1		1	1	1		1	1	2		2	2
A71	Nonmeningococcal Meningitis	340				1	2		2	3	5	9	14	18	5	5	10	6	12	14	26	28
A78	All other Diseases of the Nervous System and Sense Organs	341-344, 350-352, 354-369, 380-384, 386, 388-390, 394-398				1		1	1		3	1	4	2	2		2		5	2	7	3
A82	Other Diseases of Heart	430-434									1		1		1		1	1	2		2	1
A84	Hypertension Without Mention of Heart	444-447												1								1
A85	Diseases of Arteries	450-456												1								1
A87	Acute Upper Respiratory Infections	470-475																1				1
A88	Influenza	480-483										1	1					1		1	1	1
A89	Lobar Pneumonia	490				1	1	1	2	2	4	1	5	10	1	2	3	5	6	4	10	18
A90	Broncho Pneumonia	491	4		4	5	7	2	9	7	45	36	81	122	32	28	60	60	88	66	154	194
A91	Primary Atypical, Other and Unspecified Pneumonia	492-493					1		1		3	4	7	4	4		4	4	8	4	12	8
A92	Acute Bronchitis	500										1	1					5		1	1	5
A93	Bronchitis, Chronic and Unqualified	501, 502		1	1					1				5	1		1		1	1	2	6
A97	All Other Respiratory Diseases	511-517, 520, 522-527, 528								1	1	2	3	1					1	2	3	2
A103	Intestinal Obstruction and Hernia	560, 561, 570				1	1		1					1				1	1		1	3
A104	Gastro-Enteritis and Colitis, Except Diarrhoea of the Newborn	571, 572	4	2	6	13	2	3	5	13	72	97	169	211	39	30	69	107	117	132	249	344

Ref.	Cause of Death	Detailed List Number	European				Coloured				Bantu				Asiatic				Total			
			M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965	M	F	Tot.	1965
A106	Cholelithiasis and Cholecystitis	584, 585												1								1
A107	Other Diseases of Digestive System	536-539, 542-544, 545, 573-580, 582, 583, 586, 587				1								4	1		1	2	1		1	7
A109	Chronic Other and Unspecified Nephritis	591-594													1		1	1	1		1	1
A110	Infections of Kidney	600									1		1						1		1	
A114	Other Diseases of Genito-Urinary System	601, 603, 605-609, 611-617, 622-637										1	1							1	1	
A121	Infection of Skin and Subcutaneous Tissue	690-698										1	1	1						1	1	1
A124	Osteomyelitis and Periostitis	730												1								1
A127	Spina Bifida and Meningocele	751										1	1	2				3		1	1	5
A128	Congenital Malformations of Circulatory System	754	4	2	6	5		2	2	1		3	3	4	3	2	5	8	7	9	16	18
A129	All Other Congenital Malformations	750, 752, 753, 755-759	3	2	5	4	1		1		4	2	6	11	5	1	6	10	13	5	18	25
A130	Birth Injuries	760, 761	4	1	5	2		1	1	1	13	15	28	28	11	11	22	11	28	28	56	42
A131	Postnatal Asphyxia and Atelectasis	762	6	2	8	5	2	1	3	6	20	11	31	32	6	2	8	15	34	16	50	58
A132	Infections of the Newborn	763-768	5		5	3	2		2	2	33	18	51	40	23	14	37	38	63	32	95	83
A133	Haemolytic Disease of the Newborn	770	1		1	2		1	1	2				1	1	1	2	1	2	2	4	6
A134	All Other Defined Diseases of Early Infancy	769, 771, 772				1					7	5	12	19		2	2	3	7	7	14	23
A135	Ill-Defined Diseases Peculiar to Early Infancy and Immaturity Unqualified	773-776	19	15	34	31	5	9	14	14	80	94	174	171	47	42	89	115	151	160	311	331
A137	Ill-Defined and Unknown Causes of Mortality and Morbidity	780-793, 795, 796	7	2	9	3	2	2	4	9	139	107	246	253	9	5	14	12	157	116	273	277
AE138	Motor Vehicle Accidents	E810-E835				1	1		1										1		1	1
AE140	Accidental Poisoning	E870-E896												1								1
AE143	Accident Caused by Fire and Explosion of Combustible Material	E916												2								2
AE144	Accident Caused by Hot Substance, Corrosive Liquid, Steam and Radiation	E917, E918		1	1									1						1	1	1
AE147	All Other Accidental Causes	E910, E911, E913-E915, E920-E928, E930-E965, E969		1	1	1		1	1	1		2	2	1	1	1	2		1	5	6	3
AE149	Homicide and Injury Purposely Inflicted by Other Persons (Not in War)	E980-E985				1								1				1				3
	TOTALS		57	29	86	82	29	25	54	64	465	428	893	1021	201	153	354	424	752	635	1387	1591
	Infant Mortality Rates (Deaths of Infants Under 1 Year per 1000 Live Births)		25.44 (25.99)				37.76 (46.82)				107.18 (116.67)				42.00 (48.87)				64.30 (72.56)			

APPENDIX "C"

SEWAGE STABILISATION PONDS

HISTORICAL BACKGROUND

Following a request from the Department of Bantu Administration and Development for the City Council to act as its agent in the construction of a large Bantu township at Umlazi, outside Durban to the South of and adjacent to the Umlaas River, and as the City Council was itself formulating plans for a large housing scheme for the Indian community at Chatsworth on the Durban side of the Umlaas River, consideration had to be given to the question of sewage disposal. Both projects visualised, at the time, the construction ultimately of approximately 16,000 housing units in each scheme. In view of their magnitude and the geological formation of the areas, and because a large proportion of the land would drain naturally towards the Umlaas River, circumstances dictated that water-borne sewerage would have to be provided from the inception of these schemes.

The City Council at this time was also engaged in the provision of a main partial sewage treatment works, with an ocean outfall adjacent to the Umlaas Canal at the seaward reaches of the River, to cater for the Southern areas of the City. However, this major undertaking was not expected to be able to receive sewage for some time. Whilst the contribution from each of these huge townships was being taken into account in the determination of facilities it was self evident that, if work on the housing schemes was to be commenced timeously, some interim means would have to be provided for the treatment of sewage produced from the housing schemes to a standard acceptable for discharge at convenient points into the Umlaas River.

Obviously the permanent decentralisation of sewage treatment facilities was not favoured where it could be avoided and the capital costs of constructing conventional works on a temporary basis clearly would be unjustified. In the meantime, the National Institute for Water Research and the City Engineer had become interested in results achieved elsewhere from the treatment of sewage by natural processes in lagoons and oxidisation ponds, and the process appeared to offer an economical solution to the problem, provided that suitable and adequate land for the purpose was readily available. Investigations in the Umlaas River valley indicated two areas of approximately 30 acres each which, although not ideal, appeared to offer the possibilities of development for this purpose.

Accordingly, the City Engineer submitted a formal application to the Department of Water Affairs for permission to discharge the final effluent from these sewage systems into the Umlaas River. At its meeting held on 1st May 1961 the City Council resolved to engage the National Institute for Water Research to assist in the design and development of the stabilisation pond system, and in the interim the Soils Mechanics Division of the National Building Research Institute who had been invited to examine the suitability of available materials for the construction of pond embankments, found that the presence of a reasonably convenient borrow pit would permit the use of dwykatillite for cores and cut-off walls.

On 29th March 1962 it was agreed that a permanent Steering Committee should be formed to coordinate development, operation and research projects, and on 29th May 1962 the first of a number of meetings of a Technical Committee comprising representatives of the City Engineer's Department and the N.I.W.R. was held.

On 1st May 1962 the contractor handed over No. 1 primary pond at Umlazi thus enabling sewage to be accepted while the remainder of the system was being completed. Two primary ponds for Chatsworth became available for use during the latter part of July 1962. In both cases it took approximately 2 months for the ponds to fill. Monitoring of the Umlaas River was initiated on 19th September of that year when the first biological survey was carried out by the N.I.W.R. in association with the City Engineer.

At the request of the Secretary for Water Affairs, it was agreed to increase the composition of the Technical Committee and form a Liaison Committee instead. With effect from the fourth meeting held on 28th February 1963, membership also included the Regional Director, State Health Services: Natal and the City Medical Officer of Health, with the City Council's Director of Special Works participating from June 1964. Throughout the tenure of the Steering and Technical Committees the Department of Water Affairs and the South African Bureau of Standards were kept informed of the developments, and bi-annual progress reports have been submitted to the N.I.W.R. Following the inception of the scheme when extensions to the original ponds were made, and when additional pond area, referred to as the Lamont ponds, was provided north of the River greater flexibility of operation became possible. The completion of the major trunk sewer eventually to link Chatsworth to the projected Southern Sewage Treatment Works, with a connection across the River to the Umlazi Township permitted flexibility between the three schemes.

WATER PERMITS

The Steering Committee had been established at the instance of the N.I.W.R. not only to coordinate research and monitoring programmes but also to satisfy the Department of Water Affairs on the standard of effluent discharging into the Umlaas River, it being known that the Minister proposed to frame regulations under the Water Act, No. 54 of 1956. These regulations would lay down effluent quality standards to be applicable throughout the country which would differentiate between Regional Standards for industrial effluents discharging to catchment areas of scheduled rivers and General Standards to be applicable elsewhere. These regulations were gazetted (Government Notice No. R553) on 5th April 1962 and the latter standards were applicable in the Durban area.

It was necessary for the City Council to apply for a permit under Section 12 of the Act but should the relevant standard be unattainable, application for limited exemption could be made under Section 24. It was obvious that relaxed standards would be necessary in this case in view of the inadequacy of land for oxidation ponds. Also cognisance had to be taken of the objectives to be attained in the operation of stabilisation ponds, with particular reference to the alleviation of nuisances, as the N.I.W.R. considered at the outset that offensive conditions were likely to occur if the ponds became overloaded.

The Director of Water Affairs under cover of a letter dated 29th March 1961 issued an interim permit (81B) which laid down specifications covering the quality standards of effluent to be discharged into the River; indicated that effluent preferably should not be chlorinated unless it was found to be impossible to comply with the standards, in which case the effluent should be chlorinated before discharge to render it bacterillogically sterile; and was valid for a period of three years or until such time as the Durban Corporation was in a position to accept the effluent into its sewers, whichever was the shorter period.

At the time of expiry of the interim permit the City Council's Southern Sewerage Works were still far from complete. In view of the anticipated loads of approximately 1700 persons/acre by the year end and as the required standards could not be achieved without either loadings lower than 1000 persons/acre and/or chlorination of the effluent, the Secretary for Water Affairs was requested on 7th April 1964 to renew the relaxed permit. This application was refused on 20th July 1964, inter alia, on the grounds that a loading of 1700 persons/acre was considered excessive, and therefore certain corrective measures involving the operation of ponds so as to discharge as little effluent at as high a quality as possible, had to be adopted.

STABILISATION PONDS

There are two main methods by which stabilisation ponds may successfully be utilised in the process of sewage purification, i.e. the maturation and oxidation pond systems. There is a third and relatively unconventional method of treating raw sewage in a series of anaerobic open digestor ponds and thereafter in aerobic oxidation ponds.

(a) Oxidation Ponds

Raw sewage can be treated in a series of ponds without pre-treatment, other than the screening of detritus etc., such that the effluent may be brought to a standard acceptable for discharge into a river without chlorination. The successful operation of these stabilisation ponds, however, is dependent upon design, construction, operation and other factors conforming to recognised and proven parameters and experience and the availability of an adequate acreage of land to preclude overloading the ponds. Ponds should be constructed to a depth not exceeding 4 feet to ensure sufficient oxygenation, particularly on overcast days and in the shorter days in winter, but not less in Natal otherwise weed and reed growth would present a problem. (The depth may have to be varied in other parts of the country due to different species of vegetation such as in the case of the Cape Province where an additional 2 feet will probably be necessary).

Under normal circumstances it is feasible to accommodate sewage from 1000 persons in two acres of ponds, without the need for chlorinating final effluent, provided the ponds are arranged in a series of four of which the first should comprise one acre in extent, the second half-an-acre followed by two separate ponds of quarter-acre each, with facilities for re-circulation when necessary, with an overall limit of 500 persons/acre. If overloading exceeds this ratio anaerobic conditions are likely to develop thus probably giving

rise to nuisances and the necessity for chlorination of effluent prior to discharge to river.

(b) Anaerobic/Aerobic Ponds

It is doubtful whether from the public health viewpoint this system should ever be adopted by choice, certainly not in a large urban environment. In Durban, the Chatsworth and Umlazi oxidation pond systems, due to circumstances beyond the control of the authorities concerned, demanded the adoption of the anaerobic/aerobic method. Owing to extraordinary overloading it became necessary to (i) create small primary anaerobic digestor ponds (followed by a series of oxidation ponds) which practice allowed an overall loading of approximately 1700 persons per acre; (ii) incorporate additional pondage within the schemes and at another point near the Lamont Location; and (iii) chlorinate the final effluent. As shown in this report, due to the adoption of certain corrective measures and the maintenance of constant supervision by the Chemical Branch of the City Engineer's Department and representatives of the City Health Department, a serious nuisance was avoided, and it is considered that this system should never be introduced without the services of qualified personnel being constantly available.

(c) Maturation Ponds

In this system stabilisation ponds are utilised for the "polishing" or final treatment of effluent following the orthodox pre-treatment and filtration of sewage to humus tank standards.

Before embarking upon these sewerage projects it was necessary to establish design criteria to evaluate the feasibility of digesting raw sewage in open ponds under Durban's peculiar climatic conditions and to compare relative efficiencies with stabilisation ponds elsewhere. Representatives of the City Engineer's Department proceeded to the N.I.W.R. in Pretoria for the purpose of joint study of the proposal, and since then the development and operation of the ponds have been undertaken by the technical branches of that Department.

With the concurrence of the Department of Water Affairs it was decided to adopt the oxidation pond system of sewage purification and the original planning and layout envisaged a series of three ponds as an interim measure, pending completion of the Southern Ocean Outfall which was at that time expected to be available by 30th September 1964. These ponds at Chatsworth were to comprise a primary pond some 11 acres in extent, followed by two other ponds of 8 acres and 5 acres respectively. The acreage involved could possibly accommodate sewage produced by a population of some 12,000 persons at the ratio of 500 persons/acre but was unlikely to prove adequate in relation to the anticipated rate of development of the housing schemes. Therefore, before the system was commissioned, anaerobic ponds were constructed by the excision from the first primary pond of two small areas of a half-acre each for use as anaerobic ponds leaving a balance of 9.8 acres as an aerobic pond.

In the event, due to unforeseen circumstances, the main sewerage works were not completed in time and in fact were still not available in 1966. In the meanwhile

the Chatsworth Indian Township was developing apace as shown by the estimated population statistics set out below:

1963	...	18,840
1964	...	33,861
1965	...	45,924
1966	...	61,787

This rate of progress had called for an early review of the system and it was found necessary, inter alia, to add to the pondage, both within the scheme and at Lamont, to re-circulate frequently from secondary to primary oxidation ponds and finally to chlorinate the effluent prior to discharge into the Umlaas River.

The attached annexure depicts in sketch form the anaerobic ponds 1a and 1b, the original oxidation ponds 2 and 3 and the additional "polishing" pond 3a. Pond 4, whilst connected with the system, is operated on the oxidation principle whereby normal sewage is discharged directly therein, after screening, from a nearby section of the Indian housing scheme.

PUBLIC HEALTH IMPLICATIONS

Local public health experience of sewage ponds had been confined to the maturation ponds associated with primary orthodox sewage treatment at the kwaMashu Bantu Township. The more unconventional oxidation pond method of treating raw sewage therefore gave rise to serious reservations from the standpoint of public health. Opportunity was taken at the first meeting attended by the Regional Director, State Health Services: Natal, and the City Medical Officer of Health to express their concern in a number of respects, the former being particularly anxious over the possibility of significant increases in the bacterial counts in the River arising from the rapid growth of the population in the catchment area.

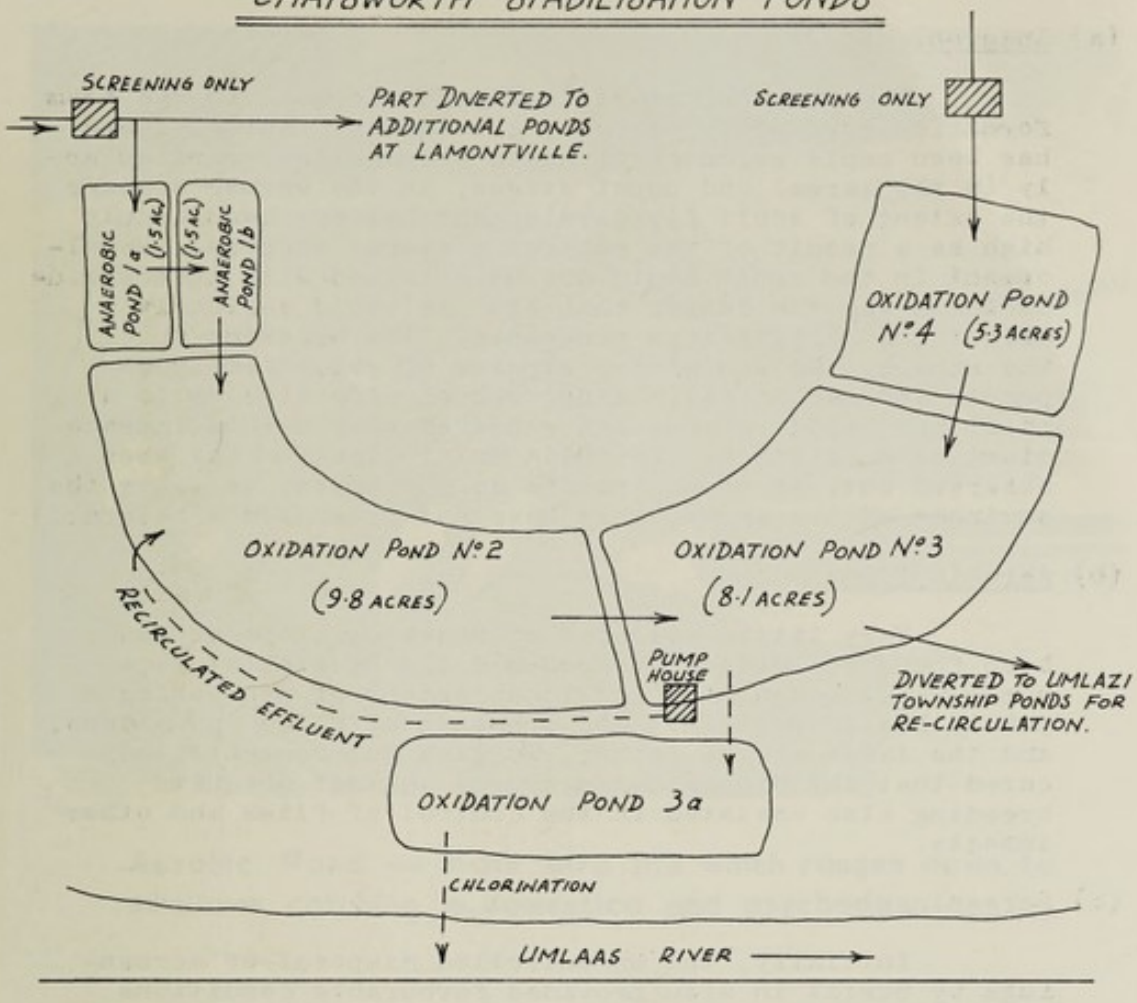
The City Medical Officer of Health stressed the potential hazards to public health with particular reference to fly and mosquito breeding, especially in the vicinity of overflow points and seepage ponds; rodent activity within rock pitched embankments and the accessibility of pond units in close proximity to dwellings rendering fencing desirable wherever possible. The City Health Department was also vitally concerned with a number of factors which could give rise to nuisance or other difficulty and therefore a constant watch had to be maintained to forestall trouble and to arrange for corrective measures as and when necessary.

The main public health considerations were fly, mosquito and rodent development and infestation; offensive smells; and environmental factors. Other problems included the disposal of screenings, detritus and grit, fish stocking and pond overloadings. It was also found that whereas sludge can be removed easily from conventional works, it could only be removed from ponds with difficulty.

FLIES

It was anticipated that fly nuisances would occur at several foci, viz. in the primary anaerobic digestor ponds and, to a lesser extent, in secondary aerobic ponds, in screenings and sludge. The measures adopted and the results thereof were as follows:-

CHATSWORTH STABILISATION PONDS



On the left the anaerobic pond 1a with heavy scum formation and growing vegetation, and on the right the anaerobic pond 1b with very slight scum formation.

(a) Anaerobic Ponds

The fears of prolific fly development in the scum formation were proved largely groundless. Whilst there has been ample evidence of Musca propagation, particularly in the larval and pupal stages, in the warmer seasons the extent of adult fly development has not been unduly high as a result of the control measures adopted. Development in the crust could not be attacked with insecticide as there was the danger that its use would seriously affect the purification processes. The breaking up of the scum by the use of jet streams of water from power pumps, and mechanical raking, proved effective up to a point but rapid reformation rendered this method impractical as a solution. Psychoda multiplication has been observed but, as these insects do not appear to leave the environs of the works, they have not presented a hazard.

(b) Aerobic Ponds

Very little evidence of Musca development has been found but midges (Chironimid and Eristalis) were numerous although also not to an extent of presenting a public health problem. The presence of flies and midges, and the larva of the latter, in fish gut contents indicated that the biological measures against mosquito breeding also assisted in the control of flies and other insects.

(c) Screenings

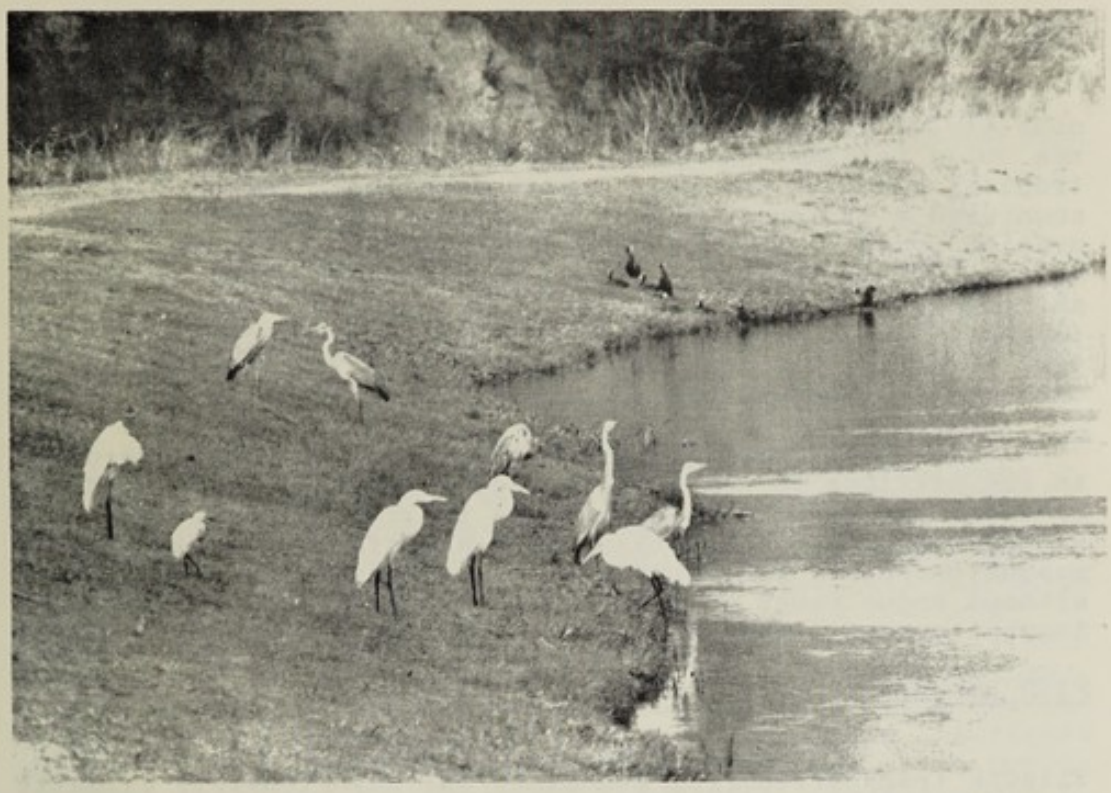
Initially, the uncontrolled disposal of screenings by burial in situ provided favourable conditions for Musca development, but public health control was established by spraying the detritus and screenings with an organophosphate insecticide prior to burial within the curtilage of the works and at a nearby refuse tipping site, and also by ensuring ample soil coverage. Although not introduced as yet, it is considered desirable that suitable means of incineration should be made available to obviate any possibility of fly development from this source.

(d) Sludge

There are a number of problems associated with sludge formation in, and removal from, shallow ponds which are referred to elsewhere, but desludging operations in anaerobic ponds, which are unfortunately necessary from time to time, give rise to a serious fly development nuisance unless the sludge is completely digested. Incompletely digested sludge in emptied ponds, during the course of removal from pond beds, and whilst being transported for disposal provides highly fly-attractive material, and development can only be controlled by greatly intensified insecticidal spraying.

(e) Control Measures

The fly problem has been overcome largely by poisoning. Suitably designed trays, mounted on steel poles to prevent interference by animals, were positioned at vantage points in close proximity to the anaerobic ponds and elsewhere within the curtilage of the works. Trays were baited at 10 to 14 day intervals with fish treated with an organophosphate poison and this method proved most effective in the destruction of adult flies.



Aerobic Pond — note bird life which ranges down to swallows catching m. domestica and psychoda

Anaerobic Pond 1a showing heavy scum formation

MOSQUITOES

Sewage, comprising water of high organic content, constitutes very favourable conditions for the propagation of the Culex fatigans mosquito, particularly in Durban's sub-tropical climate. The City Health Department had earlier encountered a serious mosquito development problem in the maturation ponds at the kwaMashu Bantu Township's sewage treatment works, where conditions were not amenable to the usual anti-larval measures, and this hazard had only been contained by the development of the biological concept of control involving the stocking of ponds with Tilapia fish of the species melanopleura and mossambica.

The Department, therefore, whilst being guarded in its attitude towards the implications of the projected schemes, had nevertheless overcome initial difficulties associated with fish stocking as a satisfactory medium of mosquito control and could view the oxidation pond system without undue cause for concern. It therefore adopted biological mosquito control measures for these Townships' ponds.

FISH STOCKING

The aerobic ponds were stocked in June 1963 with Tilapia transferred from kwaMashu, but unfortunately climatic conditions during the cooler winter months were unsuitable and restocking was necessary in September of that year. Although circumstances then were still not ideal it was hoped to establish adequate fish life prior to the advent of warm weather. In the interim, with a view to minimising mosquito breeding in the ponds, the edges were kept clear of vegetation by lining the banks with stones wherever possible, and regular weeding.

Despite the absence of optimum circumstances, by January 1964 fry were very active and there was no evidence of mosquito breeding. From the time of introduction the Tilapia, especially mossambica, thrived in this environment and were instrumental in reducing mosquito development to a minimum, except for the occasions when the balance was upset by factors such as oxygen deficiency following pond overloadings with sewage. In fact the rapid multiplication and growth of this species under local conditions in itself gave rise to a problem.

Tilapia fish in the sewage ponds may be regarded as a factor in the success of the purification process, provided the population is kept within reasonable limits. Overstocking by this prolific breeder, however, may play a part in the lowering of oxygen levels, an increase in contamination and sedimentation in the water, and disturbance of sludge when netted. This can be appreciated particularly when it is realised that local experience proved that Tilapia can be established readily within six months of initial stocking and that an annual harvest of 1½ tons per acre is not unusual. The regular netting of fish in the summer months is essential to avoid the danger of over-stocking, but not in the cooler weather when Tilapia tend to hibernate and the balance can be upset easily. On occasion, when certain oxidation ponds deteriorated and became anaerobic, accompanied by a major loss of fish life, mosquito control was restored with a re-advent of the fish, without restocking, soon after the ponds reverted to an aerobic state.

The fish also acted as a guide to the state of

the water, and close study of their behaviour and environment served as a means of gauging the public health dangers. Any increase above an optimum level presaged a reaction in the fish life, and whenever the Tilapia surfaced in any number there was undoubtedly an oxygen deficiency due to sewage surplus.

The death of fish, either spontaneous or as a result of periodic netting, gave rise to the problem of their disposal. Because of the polluted nature of the source, the safe edibility of the fish was suspect and therefore each harvest had to be destroyed by dumping, which in turn gave rise to a fly danger.

A matter warranting the fullest investigation was the question of suitability or otherwise of Tilapia fish, nurtured in sewage stabilisation ponds, as food for human consumption. This problem has formed the subject of research by a number of authorities including the Natal Parks, Game and Fish Preservation Board, the National Institute for Water Research of the C.S.I.R. and Dr. J.H.S. Gear of the South African Institute for Medical Research. The Poliomyelitis Research Foundation of the S.A.I.M.R. was unable to isolate any virus from raw fish taken from the oxidation pond system receiving crude sewage, and the only result of any importance was the presence of a variety of Salmonellae which are probably present in various other raw foodstuffs. Pathologists testing the fish have never found any pathogens which would indicate that the fish, if cooked, might be harmful for human consumption. As it has been found that heating fish from sewage ponds to 60°C eliminates all chance of recovery of any Salmonellae, and as fish are rarely eaten raw in this region by the lower income groups, it is probable that no ill-effects would arise from the distribution of such fish to indigents. However, to ensure complete safety, some form of sterilisation of the fish would be needed before distribution could be indiscriminately permitted.

RODENTS

The lining of pond embankments with stones provided potential harbourage and steps had to be taken to control infestation and prevent destructive burrowing. Rodent activity has been noted from time to time but the routine use of blood anti-coagulant poisons has proved effective.

OFFENSIVE SMELLS

It was considered by the N.I.W.R. at the outset that an odour nuisance was likely to occur if ponds became overloaded, and this possibility caused concern particularly in view of the fairly close proximity of houses in the Township. From time to time the ponds have given off offensive smells, particularly on one occasion when a secondary aerobic pond became anaerobic. Under normal conditions when the system is operating satisfactorily, without sewage overloading, there is no undue presence of smells of an obnoxious nature within the works environs, and certainly not outside its precincts. Under normal conditions the plankton algae, Chlorella species, Chlamydomomas and Euglena species, as well as diatoms materially assist the oxygenation of the water during the day particularly in sunny weather. However, if a pond develops a bright green scum due to microcystis it is indicative of a neutral or acid pH and a lack of oxygen resulting in these algae contributing to the odours by giving off a carrion-like smell. Therefore the presence of Chlorella indicates a satisfactory state of the water whereas its absence, or the appearance of the green scum, presages a deterioration which can give rise to offensive conditions. An added indicator of oxygen lack is the death of fish

(Tilapia sp.).

Very offensive odours also occurred when ponds were desludged.

DESLUDGING

One of the complicating factors in the anaerobic/aerobic pond systems and to a lesser extent the oxidation pond system of sewage purification is the problem of sludge, from both the engineering and public health viewpoints, particularly where the availability of land for pondage is limited. Desludging is essential from time to time, especially in shallow anaerobic ponds and this is a major clearance operation. A pond has first to be drained and then mechanically cleared of the sludge so causing very offensive conditions and creating the difficulty of disposal and the likelihood of fly development. Of course, whilst these operations are in hand the pond is not available for the purification process.

The necessity for periodic desludging of ponds gives rise to serious qualms and is one of the public health problems which does not seem likely of satisfactory solution. However, if a scheme be designed on the anaerobic/aerobic concept the primary digestor ponds should be as deep as possible.

EFFLUENT STANDARDS

Whilst no real problem arose respecting chemical standards, arising from the increased volume of sewage for acceptance at the works, to a level approximating 1700 persons/acre, and the non-availability of land for additional ponding, steps had to be taken to meet as far as practicable objections by the Department of Water Affairs on the bacteriological standard of effluent discharged to the Umlaas River. In an attempt to improve the standard of final effluent, a method of regular chlorination was adopted involving the use of plastic bottles containing calcium hypochlorite tablets which were immersed at the outlets. A routine was followed of replenishing tablets in the morning but the results obtained from samples of effluent demonstrated the ineffectualness of this procedure as samples taken before refilling produced faecal coli counts in excess of 120,000, whereas samples taken after the re-stocking of chlorine revealed a satisfactory E. coli count.

It is considered most desirable that proper chlorination equipment capable of constant automatic variation of dosage, according to the rate of flow, be employed. However, it is also important not to exceed the essential chlorination levels in ponds otherwise fish life may be adversely affected, with the possibility of an upsurge in mosquito breeding in either the holding pond or the river itself.

A factor that cannot be overlooked is that, bacteriologically, final effluent prior to discharge into a river can be controlled and if necessary rendered reasonably satisfactory by chlorination. The difficulties encountered in these Durban schemes, however, were threefold respecting the standard of effluent:

(i) From the inception it had been the intention to utilise the stabilisation pond system purely as an interim measure pending the completion of the main ocean outfall and it could not have been foreseen that undue delays would occur.

(ii) The land available for pondage was considered adequate for the volume of sewage requiring treatment in relation to the anticipated rate of development of the housing schemes vis a vis the completion date of the main sewerage works.

(iii) The stabilisation ponds being of a temporary nature and being remotely sited and unfenced albeit in close proximity to the housing schemes, did not justify the installation of valuable automatic chlorination equipment which could be tampered with by unauthorised persons.

SEWAGE LOADINGS

In order to maintain an efficient/effective and nuisance-free sewage purification process it is desirable that proven loadings should not be exceeded. On occasion, aerobic ponds were overloaded thus giving rise to the depletion of dissolved oxygen, poor colour, scum formation, offensive smells, loss of fish life and a consequential mosquito development problem, thus leaving no alternative but to by-pass effluent to the river. As loadings rose above acceptable levels due to the rapid growth of the population in the catchment area it became necessary to ensure that the ponds were operated so as to discharge into the River as little effluent of as high a quality as possible under the circumstances in an endeavour to comply with the General Standards. Other measures applied with a view to minimising the effects of overloading included recirculation between the series of ponds and chlorination of final effluent. In an attempt to improve the pond acreage available, land was set aside near Lamont Bantu Location, lower down the river, for the creation of additional pondage into which diversions could be effected from the schemes.

From the public health viewpoint it is considered that there are unlikely to be material nuisances whilst sewage loadings are below 500 persons/acre, and it is only when this ratio is exceeded that major problems will arise.

ENVIRONMENTAL FACTORS

The Chatsworth ponds are unfenced and situated immediately adjoining a main road serving one of the neighbourhood units, although dwellings are in fact some distance away. The Indian proclivity for fishing and children's natural attraction to stretches of water, however, have caused public health concern and the Department's health education teams have canvassed the area issuing warnings of the dangers from this source. Furthermore, poliomyelitis immunisation of the nearby local inhabitants was intensified. To date, no abnormal incidence of infectious diseases has been recorded.

Fly baiting points sited for index purposes approximately a mile distant from the sewage site proved the efficacy of the poisoning points erected in close proximity to the breeding foci, as very few flies were found to be evading these precautionary measures.

The possibility of mosquito development was viewed with concern due to the danger of mosquito-borne encephalitis, and the risk of ducks and other bird life spreading disease to other waters and surroundings by droppings.

CONCLUSIONS

From a public health viewpoint the establishment of a sewage stabilisation pond system on the oxidation pond principle and particularly when incorporating primary anaerobic digestor ponds must be viewed with extreme caution but, subject to certain safeguards, there is unlikely to be a material nuisance whilst the sewage loading is restricted to about 1000 persons/acre on the first of a series of four oxidation ponds or 500 persons per acre overall. It is only when this ratio is exceeded that major problems are likely to arise. The main nuisances associated with flies, mosquitoes and offensive smells can be maintained within reasonable proportions provided the system is kept under surveillance, control measures are followed as a routine, and prompt remedial action is taken at the first signs of any deterioration of the situation. The biological control of mosquitoes with fish, Tilapia melanopleura or mossambica (the latter proving most successful in Durban), has been a material factor in the successful operation of these schemes and without which a serious nuisance would undoubtedly have occurred.

The obvious preference is for sewage purification by orthodox methods, and systems of the types forming the subject of this experiment can only prove acceptable from the standpoint of public health in a large urban area on a short-term basis, where the population is static and if ample land is available and suitable for ponding to accommodate sewage loadings within proven limits. It is the recommendation that -

1. With the continued development of the Chatsworth Indian Township and the serious limitation of land for adequate extension of the stabilisation pond treatment system, sewage from this area should be accepted into the City's main sewerage as soon as it becomes available for connection.

2. Sewage loadings should not exceed limits of approximately 1000 persons/acre, on the first of a series of four oxidation ponds or 500 persons per acre overall, otherwise public health nuisances may occur.

3. Constant surveillance by trained personnel which should include a chemist and a sanitarian, of the state of the pond waters is necessary so that remedial measures such as recirculation can be timeously implemented as required.

4. The curtilage of sewage treatment works should be adequately fenced to prevent unauthorised access.

5. All screenings and detritus should be effectively incinerated.

6. An automatic chlorination system, operative throughout the 24 hour period, should be maintained to ensure adequate dosage of final effluent when necessary.

7. From experience gained in this experiment, it is considered that oxidation and anaerobic-aerobic digestion pond systems for the treatment of raw sewage cannot be recommended in a large urban local authority area otherwise than on a short-term basis, but "polishing" or maturation ponds as adjuncts to orthodox treatment works are acceptable provided mosquito development can be controlled by biological methods and desludging can be easily and regularly undertaken with adequate protection against nuisances.

APPENDIX "D"

CHATSWORTH

By 1958 little progress had been made with the enormous problem of providing satisfactory accommodation for the Indian community. There were various factors which had adversely affected the situation to such an extent that the whole question had become one of critical importance which required to be tackled resolutely and without delay.

The City Council had considered the matter years earlier but had reached no firm decision. The suggestion had been made that dwelling units at the rate of 600 annually should be provided but it was not possible to proceed at anything like this rate due to the absence of sufficient land in Council ownership, amongst other things. However, attention was now centred on the Umhlatuzana area where adequate land could be acquired and incorporated into the City.

Municipal Departments became seriously perturbed at the increase in Indian shack development in various parts of the borough; it was known that large areas of land in the western and northern districts which would otherwise have been available for the erection of houses were unsuitable for building construction mainly because water-borne sewerage had not reached these areas and the ground was unsuitable for the soakage of waste water. Indians who may willingly have built in other areas were precluded from doing so by group areas legislation. In the absence of suitable housing accommodation provided either by the local authority or the private sector, this community was being forced into the haphazard erection of illegal shacks without any regard to considerations of public health.

It had been held that the existing legislation did not adequately authorise the demolition of illegal shacks. Therefore the Administrator was requested to empower the Council to suitably amend its Building By-laws in this connection and at the same time also permit the erection of temporary dwellings to relaxed standards, provided certain conditions were fulfilled. These additional powers were considered essential to enable the deteriorating situation to be brought under some measure of public health control.

These authorities were granted in due course but, in the meantime, the question of shack development had grown steadily worse and Indian shack dwellers were being evicted from private land by developers. The Council in more than one instance was confronted with the necessity for permitting such evicted Indians to erect their shacks on land in the Merebank/Wentworth areas.

At that time there were many thousands of Indians who were living in unhygienic shacks on private land without any sanitary or refuse removal services being available to them and, in other instances, no water supply existed. There were also many Indian families occupying unsuitable buildings and dwellings which were defective and overcrowded. Again at least 68,000 people of the Indian race were estimated to be living in areas which were ultimately to be occupied by Europeans or Coloureds. With a population increase of approximately 4% per annum it was estimated that the total number of people would be doubled in 17 years.

Arising from the then serious situation in rela-

tion to Indian housing, the City Council (in 1958) gave consideration to a detailed report submitted jointly by the Acting City Engineer, Town Clerk, City Treasurer, City Medical Officer of Health and City Valuator and Estates Manager from which it was obvious that the problem in and around Durban was now one of most serious proportions. It was estimated that during the next 15 years the City Council would need to provide approximately 36,000 houses for Indians if the slum conditions were to be eliminated and if the housing situation was to keep pace with the annual increase in the population.

Land required for the construction of houses on so vast a scale was not available within the City's boundaries and consideration had therefore to be given to developing townships outside the City on the lines of the kwaMashu Native Township.

After examination of all the implications the City Council on 12th December, 1958, resolved that immediate steps be taken to acquire the necessary land in the Umhlatuzana area including the absorption of private townships therein to enable the Council to erect approximately 14,000 houses for Indian occupation. The City Engineer was directed to prepare an overall plan for approval under the Housing Act. Once the necessary approvals were obtained, plans and development operations were put in hand and the area was incorporated into the City.

From a public health viewpoint a matter of vital importance to be decided was the form which sanitary services would take. Experience at Cato Manor from the housing of a large Bantu population and from certain illegal shack areas occupied by the Indian community, had demonstrated that water-borne sanitation was the only safe means for disposing of human waste in a housing project of this magnitude. This was accepted in the planning of Chatsworth without which the township could not have been developed. The only reservation from the public health standpoint was that sewage, whilst reticulated and water-borne, was to discharge into maturation ponds and the effluent led into the river. Although it was claimed that this method would not be accompanied by nuisances it was felt departmentally that an unorthodox scheme of the nature envisaged might constitute a potential health hazard.

Although the housing development programme was implemented as vigorously as circumstances permitted many problems and initial set-backs had to be overcome, and it was not until 1962 that dwelling units actually became available for occupation. By the close of that year 819 houses had been completed. Since that date development and construction proceeded as rapidly as possible but, due mainly to labour and material shortages and latterly financial restrictions, development has lagged behind schedule.

A review of progress and objectives at the close of 1966 discloses that whilst much has been accomplished there still remains a lot to be done. The number of individual housing units completed totalled 9,526 in seven neighbourhood units, with a total estimated population of 71,000. Development of ancillary services and amenities has proceeded along with the construction and occupation of dwellings except in the case of shopping facilities. This has lagged behind and tended to create a problem in the form of hawking. A number of hawkers' licences have been granted for the sale of bread, cakes, etc. and many other

applications which had not been finalised for the sale of a wide variety of foodstuffs and also for three "mobile" supermarkets. This trend is viewed with concern and the Department of Community Development has been requested to expedite the planning and construction of shopping centres in each of the neighbourhood units.

Plans for the provision of a large civic centre complex which incorporates shopping facilities have been held up but it is to be hoped that it will soon be possible to proceed with this major venture. In the sphere of recreation, to date, 50 fields have been set aside for soccer, cricket and like sports, but no development has been started so far for the provision of tennis courts (80), swimming baths (3) and a central stadium.

Departmental clinics as described elsewhere in the Annual Report are being conducted at two venues and other municipal services have been provided.

Looking to the future, the backlog of development will first have to be overtaken if any material impression is to be made on the problem of rehousing the Indian community, as at the present stage the housing authority has 26,000 applications on its books. To meet this need the City Council has acquired additional small parcels of land adequate for the expansion of the scheme to an ultimate total of 22,200 houses, on some 4,700 acres, accommodating 165,000 persons. Whilst this scheme is being pursued as fast as circumstances permit it has already been realised that Chatsworth will be unable to accommodate the rapidly expanding Indian population and plans are now being made for the development of an entirely new scheme to the north of the City.

The large new Natal Provincial Hospital in Chatsworth is nearing completion and when this is opened it will meet a long desired need. The City Council has approved the setting up of a Local Affairs Committee and Municipal Departments are also in the process of training staff of the Indian group with a view to their employment in the township.